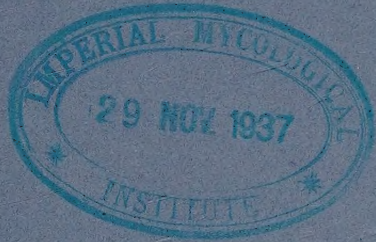


VOLUME XII
No. 7

GOVERNMENT OF NORTHERN IRELAND
MINISTRY OF AGRICULTURE

MONTHLY REPORT

NOVEMBER, 1937



PRINTED UNDER THE AUTHORITY OF HIS MAJESTY'S STATIONERY OFFICE
BY BELL & LOGAN, LTD., BELFAST

GOVERNMENT OF NORTHERN IRELAND

MINISTRY OF AGRICULTURE

MONTHLY REPORT

November, 1937

VOLUME XII

No. 7

CONTENTS

	PAGE
AGRICULTURAL CONDITIONS:—	
THE CROPS, SUPPLIES AND PRICES	335
LIVE STOCK	337
THE COST OF LIVING INDEX FIGURE	339
THE MARKETS DURING OCTOBER	339
PRICES OF AGRICULTURAL PRODUCE	340
ARTICLES:—	
Christmas Poultry Trade Prospects	342
The Potato Crop	345
Broadcasting and Agriculture	346
MARKETING SCHEMES:—	
Agricultural Marketing (Pig Industry) Act, N.I., 1934:—	
PIG PRICES FOR NOVEMBER, 1937	350
GRADING STATISTICS	352
COST OF STANDARD PIG RATION	353
The Cattle Industry (Emergency Provisions) Acts, 1934 and 1935, and The Livestock Industry Act, 1937	354
AGRICULTURAL NOTES:—	
SEASONAL FARM NOTES	355
SEASONAL LIVESTOCK NOTES	357
SEASONAL GARDEN AND ORCHARD NOTES	359
SEASONAL POULTRY-KEEPING NOTES	360

ANNOUNCEMENTS AND REMINDERS:—		PAGE
GENERAL	...	364
WINTER RATIONS FOR STOCK-FEEDING	...	367
SCHOOL NEWS	...	371
EGG-LAYING TEST AT STORMONT	...	374
AGRICULTURAL PRICES:—		
FEEDING STUFFS AT SPECIFIED CENTRES	...	378
FEEDING STUFFS (WITH CALCULATED VALUES OF PROTEIN AND STARCH UNITS)	...	379
FERTILISERS	...	384
FAT STOCK AT BELFAST AUCTION MARTS	...	384
LIVE STOCK AT FAIRS	...	385
AGRICULTURAL TRADE RETURNS:—		
SHIPMENTS OF LIVE STOCK FROM NORTHERN IRELAND PORTS	...	386
IMPORTS AND EXPORTS OF AGRICULTURAL PRODUCTS	...	387
NUMBERS OF CATTLE AND ACCOUNT OF TRADE AT FAIRS	...	388

MINISTRY OF AGRICULTURE

MONTHLY REPORT

NOVEMBER, 1937.

Farmers have had little to complain about lately as regards weather, and most of them have made such progress with seasonal farm work that it is more advanced than usual at this time. This is all to the good, as they will have extra time for arranging for the purchase and delivery of supplies of lime and basic slag on the special terms made available under the Land Fertility Scheme. It will also allow both of these materials to be applied to grass lands whenever weather conditions are suitable. The weather has been quite good for this work since the beginning of November, and no doubt farmers have it well in hand.

In view of the excellent potato crop harvested in Northern Ireland, and of the dullness of trade since the beginning of the season an attempt has been made on page 345 to guide growers in the marketing of their produce by giving some particulars of the crops harvested in Great Britain this year. Similarly in regard to the Christmas Poultry trade an account is given on page 342 of the general condition of turkeys and the estimated supplies available in Northern Ireland, together with information from other parts of the British Isles.

AGRICULTURAL CONDITIONS.

AGRICULTURAL CONDITIONS AT 1st NOVEMBER, 1937.

It was a rare experience for the Northern Ireland farmer to enjoy exceptionally fine and mild weather during the greater part of October. The first three weeks of last month were certainly ideal for late harvesting work, being fine and open with unusually long spells of sunshine for this time of the year. Latterly more seasonal, unsettled conditions brought heavy rains and cooler temperatures, but what touches of frost were experienced at the close were not of a severe nature.

Farmers made full use of this very favourable weather for outdoor pursuits, and late harvested corn crops were stored in excellent condition. Potato digging progressed rapidly, and the bulk of the tubers were pitted or stored in a dry condition. The preparation of the ground for, and the sowing of autumn varieties of wheat was done in the wheat growing areas, and many farmers managed to make headway with the ploughing of stubble land. With so much of the seasonal work on the farm so well advanced, farmers had more time than usual to devote to the important question of obtaining supplies of lime and phosphatic manures for application to their pastures last month.

Pasture lands reflected the mild and dry conditions, and continued to provide good supplies of keep for store cattle and sheep. The rains which came later freshened them to an appreciable extent, and although the ground frosts which were experienced at the end of October checked growth, they have remained in fairly good condition. Where, however, grass lands were not well grazed, the herbage deteriorated rapidly in quality.

Cattle made fairly good progress, and sheep also have done well. There were no really serious outbreaks of disease or ill-health, but such seasonal troubles as "hoose" among cattle and footrot among sheep have added considerably to the farmers' work and worry in quite a few districts. "Felon" or "mastitis" was stated to be on the decline in those areas where it was prevalent earlier in the season. Cases of "redwater" and abortion continued to be reported, and in one district in Londonderry "blackleg" had broken out among some cattle.

With good supplies of grass still available the demands on supplies of winter "keep" have been negligible as yet. Home-grown foodstuffs for live stock are, however, generally plentiful and of good quality, and the outlook

for winter feeding is much brighter on this account than last year. Purchased feeding stuffs are available in good supply, but prices have tended to harden of late with the approach of winter.

THE CROPS.

WHEAT.—The threshing of this crop has been completed in a few districts, and elsewhere small to medium quantities have been threshed. The results have generally been satisfactory, and yields of from 20 to 26 cwt. of fair to excellent quality grain have been obtained. The straw also yielded up to average dimensions and is mostly of good quality. Some crops of spring-sown wheat gave rather disappointing returns. Supplies marketed were of good quality and prices ranged from 8/- to 10/- per cwt. Small parcels were sold for seed at around 1/6d. per stone.

OATS.—Threshing operations proceeded during the month, but the results vary to a considerable degree. This is due to the fact that much of the crop threshed last month had become heated in the stack. This complaint appears to be more general than usual by reason of the fact that many farmers stacked their oats too soon.

The results of these threshings have generally been only fair, the yields being below the average, and the quality of the produce inferior in many instances. In normal circumstances, however, the threshing of oats last month was attended with quite satisfactory results, and average yields of good quality grain and straw were the general rule.

Supplies of this year's crop of white oats increased considerably at markets last month, and prices all over averaged 6/10³d. per cwt. as against 7/- the previous month and 5/8d. in October, 1936. Small lots of last year's produce continued to be offered at a few markets and cheaper rates averaging 8/9d. per cwt. ruled.

Oat straw increased in supply and cheapened slightly in price to around 43/- per ton.

BARLEY.—Results of threshings have been quite good in a few districts, but elsewhere the crop appears to have yielded poorly, and the quality of the grain is stated to be rather less satisfactory than usual. This crop is mainly grown for consumption on the farm, and threshing is carried out at irregular intervals and perhaps accounts of later threshings may tell a better story.

FLAX.—In most districts scutching has commenced and is progressing with satisfactory results. The yields of fibre are mostly of average dimensions and the quality up to the usual standard. In a few districts the straw was of variable length and light, and low yields were obtained.

Good supplies were marketed during last month, and prices at certain representative centres averaged $10/0\frac{3}{4}$ d. per stone, as compared with an average of $8/10\frac{1}{2}$ d. per stone in October, 1936, and $8/6$ d. for the corresponding month in 1935. Last month's prices at markets generally ranged from $8/6$ d. to $11/6$ d. per stone.

POTATOES.—Rapid progress was made with the lifting of this crop during the long spell of very favourable weather, and the greater portion has been pitted or stored. The yields are above the average in many places, and the tubers are mostly of sound quality. The damage caused by disease is, on the whole, relatively small, but in some heavy land prone to dampness a fair amount of damage has been done to the white varieties. Wireworms also have caused injury in a few districts. With the bulk of the crop being sound and pitted in dry condition the future prospects, as far as supplies are concerned, are brighter than usual. Unhappily the demand continues dull and prices unremunerative.

At local markets, where smaller supplies were offered for local consumption last month, prices for all classes cheapened further by $3\frac{1}{4}$ d. to $2/8\frac{3}{4}$ d. per cwt. The principal variety, Arran Victory, was $4\frac{1}{4}$ d. cheaper at $2/8$ d. and Kerr's Pink $2\frac{3}{4}$ d. cheaper at $3/1\frac{1}{2}$ d. per cwt.

The shipping trade continued quiet during October, but a brighter note was evident at the commencement of November, when larger quantities were purchased for shipment to Great Britain at firmer rates. The following figures show the quantities inspected for shipment during recent weeks, compared with a year ago:—

Week ended	Tons	Week ended	Tons
2nd October, 1937	.. 744	3rd October, 1936	.. 1,377
9th " "	.. 1,268	10th " "	.. 2,806
16th " "	.. 1,607	17th " "	.. 4,467
23rd " "	.. 2,476	24th " "	.. 3,685
30th " "	.. 2,917	31st " "	.. 3,048
6th November "	.. 4,208	7th November "	.. 4,787

The firmer prices per ton paid to growers by shipping merchants during the week ended 6th November ranged as follows:—

	Bagged.	Loose.
Up-to-date (Red Soil)	.. £2 10 0	
Up-to-date (Grey Soil)	.. £2 0 0 to £2 10 0	£2 0 0
Arran Banner	.. £2 5 0	£1 15 0
Arran Consul	.. £2 0 0 to £2 10 0	£2 0 0
Arran Victory	.. £2 0 0 to £2 5 0	£1 15 0 to £2 0 0
Kerr's Pink	.. £2 0 0 to £2 10 0	£2 0 0

MANGELS.—In some districts the roots have been lifted as a precautionary measure against attacks of frost, but elsewhere this work has not yet been started. The crop appears to have improved of late, and the yields will

mostly be of good dimensions and quality. Nevertheless the excessive rains earlier in the season, as well as the lack of sunshine, have had adverse effects in heavy soil areas where growth has been retarded by weeds, and the roots are much smaller and of poorer quality than usual.

TURNIPS.—Last month's mild weather was most favourable for this crop, and greatly compensated for the slowness of growth during the summer. In a few areas turnips are a bit irregular in appearance, but the very marked progress of growth made lately has assured that, on the whole, the yields will be much better than expected earlier. Some excellent fields will yield above the average and offset the lower yields expected in heavy soil areas where weeds have tended to retard growth. Large and sound roots will, it is considered, be more general than usual.

CABBAGE AND KALE.—At present these plants, and more especially those of marrow stem kale, are in a very promising condition and should give excellent yields. Incidentally, marrow stem kale is growing in favour, not alone on account of its usefulness for feeding to stock, but on account of its value as a suppressor of weeds.

HAY.—The threshing of seeds hay has been fairly well advanced notwithstanding the demands of other outdoor work. As a general rule the yields of seed have been satisfactory, but it is doubtful if they are quite up to average dimensions. The quality of the seeds is mostly good.

Increased supplies of seeds were sold at markets last month at prices much below those obtained in the corresponding month last year. The following were the average prices per cwt. over the entire month:—Italian 7/10d., Perennial, 9/7d, and Mixed 6/10d. Small lots of Crested Dogstail averaged 61/8 $\frac{1}{2}$ d. per cwt. at Ballynahinch last month.

Supplies of hay also increased on the month, although Upland Hay was a little less plentiful. Prices for Upland Hay decreased by 3/4d. to 61/2d. per ton. First supplies of this year's Meadow Hay ranged in price from 30/- to 55/-, and averaged 46/1d. per ton.

LIVE STOCK.

CATTLE.—Stores benefited considerably from the rather unusually long spell of mild weather and the excellent state of pastures for the time of year. The general health is good, but "hoose" has made its seasonal attack on some herds, and a few cases of "redwater" and "blackleg" have been reported. On the whole disease is rather less prevalent than at this time last year. Although there are fewer store cattle in this country than in recent years they were offered in good numbers at fairs last month where trade was inclined to be dull and prices eased further. Cattle being fattened on grasslands in Oc-

tober improved in condition. Here again numbers are stated to be down on the year, but this is more an expression of the general opinion as contrary accounts were received to the effect that farmers were getting more inclined to finish off their cattle at home.

Dairy cattle were maintained in fairly good health and condition, and cases of disease or ill-health were less numerous than usual. Attacks of "felon" or "mastitis" have declined, but sterility or abortion continues to be rather prevalent in some districts, and it was learned that this trouble was more prevalent among heifers than older stock. The milk yield showed a further seasonal decline.

The numbers of dairy stock offered for sale last month were, if anything, a little smaller than usual, and a firm demand ruled for best types of dairy cows at fully late rates.

SHEEP.—The flocks have been maintained in a normal healthy state. The recent spell of dry and mild weather had a beneficial effect in that it was rather less favourable than usual for such seasonal outbreaks as liver fluke disease and foot-rot. The latter, however, has attacked a fair number of animals. Farmers also have taken preventative measures in many cases and are generally better able to deal with such troubles when they occur than formerly, and hence no great concern is felt at the present normal incidence of disease.

Supplies offered for sale last month showed a seasonal decline, and trade generally declined. Some good types of cross-bred breeding ewes were selling well, but as a rule breeding stock and fat lambs were a little cheaper than a month ago.

Pigs.—Young pigs were about medium offerings at most centres, and meeting with a firm demand at late rates. There is still a good trade for fat sows in some districts, and fairly large numbers have been slaughtered of late. This possibly accounts to some extent for the scarcity of sows for breeding at most fairs. Good animals were scarce last month, and a stronger enquiry for these saw prices reaching as high as £15 per head for second litter animals whilst first litter sows ranged from £8 to £12 per head. It was learned that a large number of young sows have been put to the boar recently.

Store pigs, where offered, were in good request and prices tended upward.

Supplies of pork were generally adequate for requirements. Trade ruled steady until the end of October.

HORSES.—A good demand still rules, especially for strong, sound animals for agricultural purposes, and prices for these and for the draught horse type

were ranging from £40 to £60 each. Ordinary farm horses for general farm work were fetching between £25 and £40 each. Foals were stated to be selling at from £10 to £22 10s. each.

MILK.—The fluctuations in the milk yield were variable throughout the country, but generally there was a decline at a normal rate for the season of the year in most districts. Creameries paid from 4d. to 5½d. per gallon for milk delivered, the separated milk being returned to the farmer. The rate of equalization payment for milk delivered during September was determined at 0.1d. per gallon.

THE COST OF LIVING INDEX FIGURE.

The cost of maintaining unchanged the pre-war standard of living of working-class families at October 1st was 58 per cent. above the level of July, 1914, as against 55 per cent. at September 1st, 1937, and 48 per cent. at October 1st, 1936.

At October 1st the general level of retail prices of food in Great Britain and Northern Ireland, as ascertained by the Ministry of Labour was 43 per cent. above that of July, 1914, as compared with 40 per cent. at September 1st, 1937, and 32 per cent. a year ago.

THE MARKETS DURING OCTOBER.

In the vegetable markets last month values were little changed, only cabbage and parsley showing appreciable price changes. A smaller supply of the former advanced by 3½d. to 1/5d. per dozen, while parsley also decreased in quantity and depreciated in price by 4¼d. to 5¼d. per bunch. Leeks were also less plentiful, but were ¼d. dearer at 5¼d. per bunch. All other vegetables were seasonally increased in supply. Savoys were ½d. cheaper at 1/3½d. per dozen, and cauliflower 1¼d. cheaper at 1/9d. per dozen. Root vegetables were selling at last month's prices, carrots at 12/- per cwt., parsnips at 11/- per cwt., and turnips at 2/3½d. per cwt. as against 2/4d. in September.

Smaller quantities of farmers' butter were unchanged in price. Print was selling at 1/2¾d. per lb., and lump at 1/0¼d. per lb. Hen and duck eggs suffered seasonal reductions in supply, and prices advanced further. Hen eggs were 1¼d. dearer at 1/1d. per lb., and duck 7¾d. dearer at 13/4d. per 120.

In the poultry markets chickens and ducks were more numerous than in September, but hens were less plentiful. Hens and ducks were ½d. cheaper at 1/6½d. and 2/3½d. each respectively, but chickens appreciated by ¼d. to 2/5¼d. each.

Wool supplies declined by more than half, and long (unwashed) cheapened by 2¼d. to 10¾d. per lb., and mountain (unwashed) by 1½d. to 10½d. per lb.

PRICES OF AGRICULTURAL PRODUCE.

Table showing the average prices of agricultural produce in Northern Ireland during the three months ended 30th September, 1937, together with comparative figures for the same period in 1936, and the average prices ruling during the third quarter of the years 1911-1913 :—

COMMODITY	Quarter ended 30th September.			Percentage increase or decrease in price as compared with the corresponding period 1911-13.	
	NORTHERN IRELAND.			ULSTER	
	1937	1936	1911-13	3rd Quarter, 1937	3rd Quarter, 1936
per cwt.	£ s. d.	£ s. d.	£ s. d.	%	%
Oats (white)	0 7 0	0 5 10	0 7 3	-3.45	-19.54
Potatoes	0 3 0½	0 3 1½	0 3 5	-10.98	-8.53
Hay, Clover	0 3 5½	0 3 4½	0 3 5	+0.61	-1.83
" Meadow	0 2 6	0 2 7½	0 2 10	-11.77	-7.35
Grass Seed, Perennial	0 9 7	0 16 3½	0 11 7½	-17.56	+39.96
do. Mixed	0 7 4½	0 11 11	0 11 5½	-35.52	+4.19
Calves (young)	3 2 2	1 19 10	1 14 4	+81.07	+16.02
Store Cattle, 6-12 months	8 0 0	6 13 7	4 19 1	+61.48	+34.82
" 1-2 years	10 15 2	9 0 4	7 11 3	+42.26	+19.23
" 2-3 years	13 4 3	11 4 0	10 1 7	+31.09	+11.12
Fat Cattle	15 19 5	13 11 7	13 11 0	+17.86	+5.93
" Cows and Bulls	12 8 0	11 10 1	12 4 7	+1.40	+1.42
Springers (Cows and Heifers)	17 2 9	15 2 1	14 17 10	+15.08	+3.92
Milch Cows (down calved)	15 17 0	14 2 9	13 12 1	+16.51	+21.88
Lambs (under 12 months)	1 10 7	1 6 11	1 2 1	+38.49	—
Wethers	2 6 3	1 1 0	—	—	—
Breeding Ewes	2 0 5	1 14 0	2 0 6	+11.11	-32.10
Fat Sheep, 1-2 years	2 5 0	1 7 6	2 0 3	-12.42	-24.43
" over 2 years	1 15 3	1 10 5	5 15 9	+24.98	+16.41
Sows for breeding	7 4 8	6 14 9	1 8 8	+11.05	+2.91
Young pigs, 8-10 weeks	1 11 10	1 9 6	2 17 11	+11.65	-4.03
Pork	*3 4 8	*2 15 7	4 13 8	+22.86	+9.32
Butter, Farmers'	5 15 1	5 2 5	†0 9 4	—	—
Hen eggs	0 0 10½	0 0 9	—	—	—

*Average prices calculated from purchase and grading statements, allowance being made for levy and contribution charges.

†All Ireland price per 120.

The chief features of trade last quarter were the further rises in prices of store and dairy cattle from their spring levels. Fat cattle prices showed a seasonal decline but, as will be seen from the figures in the preceding table, the prices of cattle generally were maintained appreciably above their pre-war level with forward stores, springers and milch cows reflecting the continued strong demand for these classes throughout the past year.

Rather less satisfactory figures appear in respect of crop produce. The principal crop of Northern Ireland, potatoes, suffered an appreciable drop in price with the arrival of supplies of the new season's crop, but, as will be seen from the table, the average figure was not much different from that ruling in the third quarter of 1936. Oats, on the other hand, although cheaper than in the preceding quarter of this year, were fetching much higher rates than a year ago. New season's hay was maintained at about the same level as for the third quarter of last year, but prices obtained for grass-seed since the commencement of the present season have been very low.

In the sheep classes prices generally ruled above those for the corresponding period of last year. Sows for breeding also advanced in price since the spring quarter of this year, as did also young pigs, and seasonal price increases were more marked in the case of pork, farmers' butter and hen eggs, than in 1936.

With so many appreciable gains in prices the quarterly return may be regarded with satisfaction, notwithstanding the more or less general lowness of prices of the new season's crop produce.

CHRISTMAS POULTRY TRADE PROSPECTS.

With the approach of Christmas, poultry producers in Northern Ireland, and more particularly those catering for the Christmas turkey trade, will be desirous of learning something about the general position of supplies, and how it compares with last year. A general estimate of the position is therefore given here in the hope that it may be of service in this connection.

The agricultural statistics for Northern Ireland, taken at the 1st June last, showed that the total poultry population declined by 3.7% from 10,570,000 at the same date in 1936, to 10,180,000. Ordinary fowl decreased by 3.4% to 9,219,565, ducks by 14.2% to 427,968, and geese by 19.7% to 111,573. Turkeys alone increased in number by 8% from 389,273 in 1936 to 420,297.

The reductions indicated have been entirely in the number of birds hatched this year, and here the inclement weather of the spring months appears to have been one of the principal factors responsible for the reduction in the number of birds reared. It might appear from the increase in the number of turkeys at the beginning of June last that larger supplies for the coming Christmas season were assured. Later accounts, however, seem to indicate that such a possibility was removed by the effects of weather and other causes. Although later hatched turkeys met kindlier weather conditions, heavy losses occurred as a result of rearing troubles, which are considered to have resulted from the damp and cold weather experienced earlier. It is, therefore, probable that supplies of turkeys will not be more than average for this season.

In regard to the condition of the birds, it is understood that the high costs of feeding stuffs throughout the year have been a serious handicap to producers in backward districts, and it was feared that the use of purchased meals for feeding to turkeys might have been curtailed generally on this account. Recent reports, however, indicate that in the main breeders have been able to maintain their flocks in fairly good condition, despite the weather and high costs of feeding. Latterly, the cheapness of potatoes has helped considerably in the feeding of turkeys, and their condition will also have improved as the result of the mild weather of the autumn months.

Geese, notwithstanding an appreciable decline in population, will probably be again available in adequate supplies, and their condition at present is, on the whole, satisfactory.

Judging from returns of poultry population, the position in Great Britain with regard to supplies of turkeys, is rather better than a year ago. In England and Wales the population of poultry on the 4th June last showed a decrease of 9.2%, and this decline was fairly generally spread throughout the country. As the result of an enquiry on September 4th, the number of turkeys on agricultural holdings in England and Wales on that date was provisionally estimated by the Ministry of Agriculture and Fisheries at 975,000, compared with 683,000 on the 4th June. It was further stated that until a few years ago the hatching season for turkeys in England and Wales was nearly over by the time the 4th June returns were collected, and the increase now shown between June and September is evidence of the manner in which farmers have set themselves to cater for the Christmas demand for small turkeys, a demand which was formerly met almost wholly by supplies from the Continent.

In Scotland, where the total poultry population decreased by 7.9%, turkeys increased in numbers by 21% to 117,100, and geese decreased by 5.7% to 24,600.

Imports of dead poultry into the United Kingdom during the month of December, 1936, increased to 187,358 cwts. from the figure of 155,030 cwts. in the corresponding month of 1935. The principal sources of supply were the Irish Free State, Hungary and Yugo-Slavia, and all shared in the increased volume of trade, and together accounted for more than three-quarters of the imports in that month. During recent years, however, there has been a marked decrease in the total imports of dead turkeys into the United Kingdom, the figures being 1934, 261,098 cwts.; 1935, 219,509 cwts.; and 1936, 216,045 cwts. The decrease has been partly attributed to the tariff of 3d. per lb. imposed on birds from foreign countries and those Empire countries outside the terms of the Ottawa agreement and to an import duty of 5d. per lb. on dead turkeys from the Irish Free State. It should be remembered, however, that supplies from those Empire countries which shared in the Ottawa agreements are permitted to enter the United Kingdom duty free; also that the Irish Free State Government partly offset the duty by a bounty which was increased to 3d. per lb. during the month of December last. Furthermore, imports from January to September this year show an increase of over 30% on the figure for the corresponding period in 1936. While the consuming public generally is in favour of turkeys produced in the United Kingdom on account of their superior quality, producers in Northern Ireland should not take things for granted but should continue their efforts to market good quality birds. The quality demanded by the consuming public is of a high standard, and those producers who have striven to attain that standard have received satisfactory returns in the past few seasons. There is every likelihood that this coming season will prove remunerative to those producers who have good quality birds to sell, as the general

state of trade in the United Kingdom has improved since last year, and there will be more money available for the festive board this Christmas. In addition to the necessity for good quality, producers should profit from the experience gained in recent years and market birds of lighter weights than formerly. Small birds up to 14 lbs. dead weight are now in chief demand, and actually fetch higher prices per lb. than larger birds.

The following average prices per lb. of dead poultry (wholesaler to retailer) at English markets during the week ended November 10th, are quoted as a guide to producers:—

	Bristol		Liverpool		London	
	1st qual.	2nd qual.	1st qual.	2nd qual.	1st qual.	2nd qual.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Chickens, British, Surrey	1 2	1 0	—	—	1 3½	1 2½
" " other	1 0	10	11½	10	1 1¾	1 1½
" Northern Ireland	—	—	11½	10	1 1	11½
" Irish Free State	—	—	11½	10	1 0½	11
Ducklings, British	11	9	1 0	10	11½	10½
" Northern Ireland	—	—	1 0	10	—	—
" Irish Free State	—	—	1 0	10	—	—
Geese, British	10	9	9	8½	10½	10
Turkeys, Northern Ireland	—	—	1 4	1 3	—	—
" Irish Free State	—	—	1 4	1 3	—	—

The following statement shows the weekly imports of poultry registered as entering the United Kingdom during recent weeks:—

				Week ended 3rd November, 1937	Week ended 27th October, 1937
				cwts.	cwts.
Chickens	..	..	..	3,546	5,216
Turkeys	..	..	..	2,467	2,873
Ducks and Geese	..	..	..	292	270
Other Poultry	..	..	..	744	738

THE POTATO CROP.

As will be learned from the account of Agricultural conditions in Northern Ireland on page 336 the lifting of this crop was almost completed by the end of October. This work was done during excellent weather, and soil conditions were equally favourable. Good yields of sound tubers were more the rule than the exception, and the crop was pitted in a dry condition. Disease was less prevalent than last year, and so far as supplies are concerned the situation is indeed satisfactory. Trade in this commodity, however, has been very quiet up to the present, and farmers are naturally getting anxious about the prospects of disposing of their stocks to advantage. Since Northern Ireland's trade is mainly dependent on the position in England and Wales, it is perhaps desirable to inform farmers in Northern Ireland now of the latest particulars regarding the crops in those countries and in Scotland.

According to the Monthly Agricultural Report issued by the Ministry of Agriculture and Fisheries on the 9th November, the quality and condition of the crops in England and Wales are generally favourable. Disease is reported to be rather less prevalent than usual, and the keeping quality of the crop is considered to be good generally. The yield per acre over the whole country is forecast at $6\frac{1}{2}$ tons, which is $\frac{1}{4}$ ton greater than the average of the forecasts made on the 1st November of the ten years 1927 to 1936. The forecast for this year is approximately the same as the average of the final estimates of the ten years 1927 to 1936, and about $\frac{1}{4}$ ton more than the final estimated yield of last year. The total production for this year is forecast at 2,973,000 tons, compared with 2,814,000 tons in 1936, and with 3,127,000 tons which was the average yearly production of the last ten years. The final estimate of the production of the crop during each of the past ten years has, on the average, been 4.9 per cent. more than the forecast made on the 1st November, and if a similar allowance is made in regard to the current November forecast the total production for this year, as finally estimated, may be expected to exceed 3 million tons.

It was stated in last month's issue of the Monthly Report of the Department of Agriculture for Scotland that the position of the potato crop there was generally rather unfavourable. Blight was apparent in various parts of the country, and disease appears to have attacked second earlies and "King Edward" more than other varieties. A forecast based on estimates gives the total produce of potatoes as 895,000 tons as compared with the figure of 915,000 tons at the corresponding date last year.

BROADCASTING AND AGRICULTURE.

It was a happy thought that prompted the British Broadcasting Corporation to bring together a large company of 155 farmers, representative of the community in Northern Ireland, at a Conference in the Grand Central Hotel, Belfast, on Friday, 29th October, for a discussion as to how the broadcasting services in Northern Ireland could be improved in the interests of the farmer.

The Minister of Agriculture for Northern Ireland, the Rt. Hon. Sir Basil Brooke, Bart, C.B.E., D.L., M.P., presided, and with him on the platform were :—

FOR THE B.B.C. :—

Sir Stephen Tallents, K.C.M.G., C.B.E.,
Controller (Public Relations).

Mr. G. L. Marshall, Northern Ireland Regional Director.

Mr. J. T. Sutthery, Programme Director.

Mr. C. F. B. Stubbs, Public Relations Officer.

FOR THE MINISTRY OF AGRICULTURE :—

Dr. G. Scott Robertson, Permanent Secretary.

Mr. J. Getty, Chief Inspector.

Mr. H. A. M. Barbour, President, Ulster Agricultural Organisation Society, and Mr. R. J. Hale, Deputy President, Ulster Farmers' Union, were also present, together with the former Minister of Agriculture, the Rt. Hon. Sir Edward Archdale, Bart., D.L., M.P.

THE CHAIRMAN, in his opening remarks, congratulated the B.B.C. on their enterprise, and thanked them for the desire to help the industry. He then invited those present to express themselves freely on the questions listed for discussion.

MR. MARSHALL, who followed, said the B.B.C. had always conceived it to be their duty to further agricultural interests through the means at their disposal. "The time has now come", he said, "when we wish to take stock of our position, and we hope that as a result of this Conference we may be able to help you in a greater measure than in the past".

The questions on the Agenda are printed here, together with a brief account of the general opinion expressed in each case.

1. Would you prefer farming talks to be given, as far as possible, at the SAME time in the evening, but on different days, or on the same DAY but at different times?

A fixed time in the evening for farming talks was preferred to the only other alternative available, namely, a fixed day of the week but at different times.

2. Does any particular day of the week suit you better than another, or is any particular day very unsuitable?

Monday appears to be the general preference for listening farmers. It was also learned that Fridays or Saturdays are most unsuitable days.

3. What is your best listening time:

(a) in Summer?

(b) in Winter?

Farmers generally preferred talks, if given in the summer time, to be broadcast not earlier than 9 pm., and in the winter time as soon as possible after the Agricultural Prices Bulletin at 7-30 p.m.

4. Is the Agricultural Bulletin at 7-25 what you want? Does it give you the information you need, and is it read slowly enough to enable you to take notes? What would you suggest for its improvement?

This question was discussed at considerable length, and the chief points that evolved were:—

- (a) General information about prices of livestock at cross-channel centres was desired, in addition to a fuller account of the home trade. Potato prices at the principal centres in Great Britain were also sought for in these Bulletins.
- (b) It was the feeling at the meeting that a description of trade and of the trend of prices would be helpful, in addition to actual prices.
- (c) Periodical statements on the state of trade in live stock and potatoes were desired on Wednesdays and/or Fridays.
- (d) It was also asked that particulars of trade and prices at Belfast Cattle Sales be given on Tuesday evenings instead of Wednesday as at present.

5. Do you find the specialised talks by the Ministry experts really useful? Do you find them easy to follow, and would you like more of them?

The answer in each case was unanimously "Yes".

6. How do you like the discussions? Have you found the subjects chosen interesting? Would you like more of them?

The Conference expressed itself in general favour of these discussions, and desired more of them.

7. Is Mr. Peter Fitzpatrick giving you what you want in his talks "Farmers' Work and Worry"? Do you feel that he is representing the opinion of a fairly large percentage of farmers?

The meeting expressed its warm approval of these talks, chiefly on account of their local flavour.

8. Do you like the Young Farmers' Debates as they are—on fairly general subjects, treated in a fairly light way, or would you like them to be more serious?

These debates also came in for general approval, and many speakers stressed the point that the treatment of the subjects in lighter vein was the secret of their popularity.

9. Would you like a weekly bulletin, taking about a quarter of an hour, reviewing the movement of prices, exports and farming conditions generally during the previous week? This would have to be given before seven o'clock, but it could be kept fairly regularly to a Monday, if that day were suitable to you.

The meeting favoured this suggestion, and Monday was generally agreed to be a good day.

10. Would it be an advantage if every agricultural talk ended with five minutes of question and answer? What is suggested is that one of yourselves should be present in the studio, and should have the opportunity of asking the speaker the sort of question that would occur to you. Both question and answer would be broadcast.

A general discussion took place as to whether questions should be put to the speaker without previous information being given beforehand. It was pointed out that in the interests of the listener it was reasonable to expect that the speaker should have some previous warning of the points likely to be raised, so that there would be no interruption in the programme while he was framing an answer in his mind. In this connection it was stressed that relevancy was essential, and that it was feared that the stumbling block would more likely be caused by the form of the question, rather than by the subject.

Since, however, the B.B.C. did not permit extempore discussions of this nature, it was left to the Advisory Committee, to be set up following this Conference, to work out a Scheme.

11. Any additional suggestions for the improvement of the agricultural broadcasting service.

The following suggestions were made in reply to this question :—

- (1) That advisory talks on diseases of animals and plants be given at times prior to the seasons at which outbreaks usually occur, and in general as many topical talks as was felt necessary in certain circumstances.
- (2) Talks should be given on the rearing of pigs and other stock from the time of birth until the time they were ready for marketing.
- (3) A series of talks on farms in Ulster to be given either by the farmer himself or by somebody who visited the farm and saw how it was being run. By this means it was hoped that farmers in backward districts would be greatly assisted by the knowledge of their brother farmers who are running up-to-date farms on particular lines.
- (4) That the talks and discussions should be made of general interest by including representatives of consumers and middlemen who could give their point of view.

Sir Stephen Tallents, in a short speech closing the Conference, said it had been a pioneer Conference in this field, and expressed his satisfaction with the practical work done in regard to assisting the B.B.C. in this matter.

MARKETING SCHEMES.

AGRICULTURAL MARKETING (PIG INDUSTRY) ACT (N.I.), 1934.

PIG PRICES FOR NOVEMBER, 1937.

The following announcement has been made by the Pig Industry Council for Northern Ireland.

PRICES FOR DEAD PIGS.

The prices per dead cwt. for dead pigs sold by producers to curers in Northern Ireland in November, 1937, are as follows:—

Weight Class. (Dead Weight)	Grade 1.	Grade 2.	Grade 3.	U.L. or U.F.	Partly Black Pigs.
c.1.0.21 to c.1.1.13	67/6	64/6	61/6	57/6	5/- below relevant Grade Price.
c.1.1.14 to c.1.2.3	71/6	68/6	65/6	61/6	
Weight Class. (Dead Weight)	Grade A.	Grade B.	Grade C.	U.L. or U.F.	
c.1.2.4 to c.1.2.14	71/6	68/6	65/6	62/6	
c.1.2.15 to c.1.3.14	71/6	68/6	65/6	62/6	
c.1.3.15 to c.2.0.0	68/6	65/6	62/6	59/6	
c.2.0.1 to c.2.0.14	62/6	59/6	56/6	53/6	

Pig Carcases c.1.0.0 to c.1.0.20 :—64/6.

Authorised cuts:—

- Broken ham (dry, shank and/or shell bone break)—5% of the gross value of the carcase.
- Broken ham (wet break)—12½% of the gross value of the carcase.
- Shoulder-stuck carcase—3/- per shoulder affected.

The gross value of a carcase is the product of the dead weight and the relevant grade or other price per cwt.

Where portion of a pig carcase is condemned on account of disease the existence of which could not reasonably have been known to the producer before despatch to the curer, the appropriate grade price (or fixed price if the carcase weighs not less than 1 cwt. 0 qr. 0 lb. and not more than 1 cwt. 0 qr. 20 lb.) shall apply. If the carcase is wholly condemned on account of disease the existence of which could not reasonably have been known to the producer before despatch to the curer the relevant Grade 2 or Grade B price (or fixed price if the carcase weighs not less than 1 cwt. 0 qr. 0 lb. and not more than 1 cwt. 0 qr. 20 lb.) shall apply.

The foregoing prices do not apply in the case of (a) wholly black pigs, boars, rigs or stags, sucked sows, and pig carcasses weighing under c.1.0.0 or over c.2.0.14, and (b) pigs visibly diagnosable as diseased before despatch by the producer and subsequently condemned; emaciated or screw pigs; smelling pig carcasses with definite indications of putrefaction, and pig carcasses badly abused or damaged before being handed over by the producer to the curer.

PRICES FOR WILTSHIRE PIGS SOLD ON DIRECT CONTRACT.

In the case of pigs sold alive under direct contract to Wiltshire curers the prices per dead cwt. payable for pigs delivered in respect of the month of November, 1937, are as follows:—

Weight Class. (Dead Weight)	Grade 1.	Grade 2.	Grade 3.	U.L. or U.F.	Unsuitable.
c.1.0.21 to c.1.1.13	77/6	74/6	71/6	67/6	64/6
c.1.1.14 to c.1.2.3	77/6	74/6	71/6	67/6	64/6
	Grade A.	Grade B.	Grade C.	U.L. or U.F.	
c.1.2.4 to c.1.2.7	74/6	71/6	68/6	65/6	
c.1.0.0 to c.1.0.20	Suitable 66/6		Unsuitable 64/6		
Over c.1.2.7	On the same basis as pigs sold dead.				

PRICES FOR LIVE PIGS SOLD TO THE PIGS MARKETING BOARD (NORTHERN IRELAND).

In the case of pigs sold alive to the Pigs Marketing Board during November, 1937, the prices per live cwt., according to grade, are as follows:—

Live Weight.	Grade 1.	Grade 2.	Grade 3.	Unsuitable.
c.1.1.14 to c.1.2.13	50/-	50/-	50/-	48/6
c.1.2.14 to c.2.0.0	58/3	56/-	53/9	48/6
c.2.0.1 to c.2.1.14	53/9	51/6	49/3	47/-
c.2.1.15 to c.2.2.7	51/6	49/3	47/-	44/9
c.2.2.8 to c.2.2.21	47/-	44/9	42/6	40/3

These prices do not apply to live pigs under c.1.1.14 or over c.2.2.21, live pigs intended for breeding, live boars, live sucked sows, rigs or stags, injured or diseased pigs, live in-pig gilts, or live pigs sold (on contract registered with the Pig Industry Council) to curers in Northern Ireland. All other live pigs inside the weights c.1.2.0. to c.2.2.21 can be sold only to the Board.

AUTHORISED DEDUCTIONS.

Every pig (dead or alive) sold to a curer or to the Pigs Marketing Board is subject to a levy and contribution at present amounting to 3/-.

In addition to this amount, a deduction of 4d. per pig may be made in the case of sales to curers to cover insurance, so that the producer will not suffer financial loss if the carcase is condemned as unfit for human consumption.

In the case of pigs sold to the Board, there is a deduction of 2/6d. per pig for marketing charges.

GRADING STATISTICS.

Table showing the percentages of pig carcasses falling within the weight and grade classes indicated during September, 1937.

Under 1.0.21				c.1.0.21 to c.1.1.13				c.1.1.14 to c.1.2.3				Totals		
Suitable	Un-suitable			Grade 1	Grade 2	Grade 3	U.L. & U.F.	U.	Grade 1	Grade 2	Grade 3		U.L. & U.F.	U.
1.07	.17			2.70	1.56	.61	.27	.02	4.87	5.61	3.47		1.65	.02
Grade A.				Grade B.				Grade C.						
1	2	3	4	1	2	3	4	1	2	3	4			
9.23	17.60	2.58	.44	6.87	18.86	3.78	1.01	2.51	9.25	1.30	.34	73.77		
Ungraded Carcases.														
Under Grade A measurements. U.L.		Over Grade C measurements U.F.		Wholly condemned U1.		Wholly black, injured or damaged U2.		Overweights, boars, sows, etc. X.		Partly Black Y.				
.02		3.01		.04		.49		.61		.04		4.21		
Total													100%	

These figures have been calculated from the purchase and grading statements which the curers furnish to the Ministry.

The average price paid to producers for pig carcasses during the month of September was £5 6s. 10d.; the average weight c.1.2.18; and the average price of pork £3 4s. 4d. per cwt.

The following table gives the percentage results of an analysis of the purchase and grading statement furnished by Wiltshire Bacon Curers in respect of live pigs delivered on direct contract by producers during the month of September, 1937.

Weight Class.	Grade 1.	Grade 2.	Grade 3.	Unsuitable U.L. or U.F.	Total
Under c.1.0.0 ..				—	.17
c.1.0.0 to c.1.0.20 ..				—	2.79
c.1.0.21 to c.1.2.3 ..	36.68	34.18	11.37	4.59	86.82
	Grade A.	Grade B.	Grade C.		
c.1.2.4 to c.1.2.7 ..	1.33	2.21	1.22	.29	5.05
c.1.2.8 to c.1.3.14	.87	2.03	1.28	.93	5.11
Over c.1.3.14 ..	—	—	—	.06	.06
TOTAL					100.00

The average net price per cwt. in respect of these deliveries works out at £3 10s. 1d. after making allowance for insurance and contribution to the Pigs Marketing Board.

The average weight works out at c.1.1.17, the net average price per pig being £4 18s. 5d.

COST OF STANDARD PIG RATION.

The average retail cash price per cwt. of the standard ration for the sixteen weeks' period ended 23rd October, was 10/1d. This figure has been calculated by the Ministry from returns collected from 10 representative centres in Northern Ireland.

The following is the ration upon which the feeding cost is based:—

Maize Meal	...	...	30%
Barley Meal	...	...	30%
Pollards (White)	...	...	20%
White Bran	...	...	10%
Meat Meal (60% Protein)	...	...	10%

THE CATTLE INDUSTRY (EMERGENCY PROVISIONS) ACTS, 1934 AND 1935 AND THE LIVESTOCK INDUSTRY ACT, 1937.

The following is a summary of payments made under these Acts up to and including 30th October, 1937 :—

	Number of Animals	Total Amount paid
Live Weight		
England and Wales	3,514,651	£8,311,098 19 2
Scotland	1,061,853	£2,617,253 5 0
Northern Ireland	375,474	£781,945 7 9
Total (United Kingdom)	4,951,978	£11,710,297 11 11

Dead Weight		
England and Wales	115,078	£289,805 14 8
Scotland	33,370	£90,797 11 9
Total (Great Britain)	148,448	£380,603 6 5

AGRICULTURAL NOTES.

SEASONAL FARM NOTES.

PLOUGHING.—Early ploughing exposes the soil to winter frosts, and thus aids considerably in obtaining a good tilth, and facilitates the preparation of the seed bed.

The ploughing of stubble ground should, therefore, be proceeded with when weather and soil conditions are suitable.

Where attacks of “finger and toe” or club root disease are liable to occur, a dressing of about 2 tons per statute acre of burnt lime should be applied to land intended for turnips or cabbages before the stubbles are ploughed. Lime is an effective preventive of this disease, but as some time is required for lime to become incorporated with the soil, and thus to be effective, the time between its application and the sowing of the turnips should be as long as possible, and not less than four or five months.

WHEAT.—If not already done, winter wheat should be sown as soon as possible when soil conditions are suitable; late sowing invariably results in later ripening and frequently in unsatisfactory crops being obtained. Ground from which potatoes have been harvested is very suitable for wheat growing and, on such ground, the application of manures is not necessary at the time of sowing. A seeding at the rate of from 14 to 16 stones per statute acre should be given, and it is a good practice to dress the seed with “Ceresan” or “Agrosan G” at the rate of from 5 to 8 ounces per cwt. of seed, as a preventive of smut and other seed-borne diseases. Varieties, such as Queen Wilhelmina, Squareheads’ Master and Victor have given good results in trials carried out at various centres in Northern Ireland. A supply of home-grown wheat will materially reduce expenditure on purchased feeding stuffs, and at the present price of wheat and wheat offals (bran and pollards), it is a sound economic practice to produce as much wheat as possible on the farm.

POTATOES.—The sprouting of seed potatoes which are intended for planting next year is strongly recommended. Now is the time to put the potatoes into the sprouting boxes. Heavier yields and cleaner crops will be obtained if the seed at planting time is well sprouted in boxes. The initial cost of the boxes is comparatively small and, provided reasonable care is taken, they will remain serviceable for a number of years.

The advantages of planting seed from selected stocks of potatoes have been pointed out from time to time in these notes. Freedom from diseases, such as mosaic and leaf roll, is the first essential in obtaining heavy yields. Farmers, having stocks of potatoes which have deteriorated, and are showing visible symptoms of these diseases, are strongly advised to obtain seed from selected stocks. Supplies of selected stocks are now plentiful and, as prices this year are very reasonable, a good opportunity is afforded of changing seed and obtaining supplies from these superior stocks. The inspection of growing crops was again carried out during the past summer, and lists giving the names and addresses of growers, whose crops on inspection were found to conform to the standards as regards health and purity, have now been published. In addition, crops of potatoes which were of a specially high standard of healthiness have been listed separately as "Stock Seed". Copies of these lists can be obtained free from the Ministry, on request.

LAND FERTILITY SCHEME AND GRASSLAND IMPROVEMENT.—The Land Fertility Scheme which is now in operation offers an unique opportunity to farmers to improve pasture in poor condition and to build up the general fertility of the land. Periodical applications of lime and of phosphates are essential if the land is to be maintained in a state of high fertility, and under the Scheme supplies of lime can be obtained at half the usual cost, while the price of British basic slag, a phosphatic manure, is reduced by one quarter.

For grassland, lime is best applied during the autumn or early winter after the herbage has been eaten bare. A dressing of from 1 to 2 tons per statute acre of burnt lime is suitable for this purpose. The lime can be conveniently applied by placing small heaps of the burnt limestone over the field to be dressed. If the heaps are left exposed to the atmosphere, slaking to a fine powder takes place in a few days, and the lime can then be scattered over the field with ordinary shovels.

Basic slag can be applied after liming has been carried out, or, if desired, a few weeks can elapse after the lime is put on before the slag is applied. It should be noted, however, that, as slag is slow in action it should be applied as early in the season as possible so that results may be obtained in the following year's grazing. A dressing of from 6 to 8 cwt. per acre of this manure is recommended. As it is understood that supplies of British basic slag may be difficult to obtain, it may be pointed out that Gafsa rock phosphate and Semsol, when applied at similar rates as basic slag, have given very satisfactory results for the improvement of grassland. Farmers, who are unable to obtain supplies of basic slag, should not therefore postpone the application of a phosphatic manure to pasture, but are recommended to apply either Gafsa rock phosphate or "Semsol". The provisions of the Land Fertility Scheme do not, however, apply to these manures.

On the lighter classes of soils the application of 1 cwt. 30 per cent. potash salts in addition to a phosphatic manure is necessary if the best results are to be obtained.

DESTRUCTION OF RUSHES.—Where rushes are abundant and the land is not water-logged, considerable improvement can be effected by cutting the rushes close to the ground now, and by applying a dressing of lime and of one or other of the phosphatic manures mentioned above. Following this treatment the young rushes which subsequently grow, being more palatable, are eaten by stock, and further strong growth is checked. If the rushes which grow next season are cut twice during the summer months, almost complete eradication can be effected in most cases.

SEASONAL LIVESTOCK NOTES.

WINTER RATIONS FOR STOCK.—As the winter feeding period has now commenced, the problem of making up suitable and economical rations for stock should be carefully considered. To assist feeders in compounding suitable rations, an article, in which examples of economical rations which have given good results, is given on page 367 of this report.

AMOUNT OF MEAL MIXTURES TO FEED.—The rations outlined in the article should be fed in the correct amounts and in the case of cattle, along with a supply of good hay and roots. For dairy cows, 3 lbs. of one or other of the mixtures given should be fed for each gallon of milk produced. Thus a cow giving 3 gallons of milk should receive about 9 lbs. of meal mixture per day along with hay and roots. Further information on the feeding of dairy cows is given in Leaflet No. 16.

For fattening cattle about 3 lb. of the meal mixture given on page 368 should be fed per head daily at the commencement of fattening, and this allowance gradually increased until from 8 to 9 lb. is being given to each animal per day towards the end of the fattening period. The addition of a little linseed to the ration is beneficial towards the finishing stages, as this food aids in producing a good finish or "bloom" in the animals.

WATER SUPPLY DURING THE WINTER.—The provision of an adequate water supply for animals during the winter is an important feature of successful management which, if overlooked, may lead to very disappointing results. In the case of dairy cows, approximately 3 gallons of water are required for each gallon of milk produced, and unless the cow is provided with an adequate supply of water, the milk yield and general health of the animals will be adversely affected. A proportion of the water requirements is provided by

the roots supplied, but where water is not laid on to the stalls, the animals should be given an opportunity to drink three times daily. It is a good practice to allow dairy cows out on pasture for a short time each day during the winter months when weather conditions are suitable. This daily run out should not, however, be relied on to provide the animals with all the water they require; if it is, the practice may result in the cows drinking too large an amount of water at one time, and may, consequently, cause serious derangements.

LICE ON CATTLE.—Pests, such as lice, frequently attack cattle during the winter months, and heavy infestations of these parasites prevent good thriving. A dressing of a five per cent. solution (one part in twenty parts water) of Jeyes' fluid, or the application of a carbolic sheep dip, or one of the washes recommended for the destruction of ox-warble fly maggots in cattle, (see Leaflet No. 64), will destroy lice. A second application of the wash should be given about ten days after the first.

RINGWORM.—This malady is also often a source of trouble during the winter, and unless steps are taken in time it may spread rapidly to other cattle on the farm. The affected parts of the animals should be well scrubbed with a hot soda solution made up by dissolving 1 lb. washing soda in 1 gallon hot water. This will soften the crusts and enable them to be removed. As the crusts contain virulent infective material, they should be collected in a paper bag and burned. After the crusts have been removed, the affected parts should be treated with a dressing to kill the fungus which causes the disease. A solution of 1 lb. copper sulphate in 1 gallon of water is effective for the purpose. An ointment, made by thoroughly mixing 1 part of carbolic sheep dip, 1 part sulphur, and 10 parts lard, is also very satisfactory. Further information regarding the control of ringworm is given in Leaflet No. 70.

FEEDING OF SHEEP.—Breeding sheep will benefit considerably from a little hand-feeding from now onwards. Extra feeding, as well as maintaining the flock in good condition, aids in preventing possible losses from liver fluke disease. In addition to grass, a small allowance of turnips (about one per head daily), and of oats should be given. Where the grazing is of poor quality, however, it is advisable to feed a mixture of oats, bran and linseed cake at the rate of about 1 lb. per head daily.

LIVER FLUKE DISEASE.—As an aid in preventing this disease, sheep should be kept off low-lying, marshy land, and grazed on the higher, well-drained fields. Dosing with carbon tetrachloride capsules should also be carried out periodically. Full particulars regarding the control of liver fluke disease are given in Leaflet No. 24.

REARING OF PIGS.—Winter litters of pigs are often more difficult to rear than those farrowed during the spring and summer months. Suitable feeding, combined with good housing accommodation, aid in obtaining healthy, easily-reared litters during the winter months.

Sows suckling litters should be well fed so that the flow of milk may be encouraged, while fresh green food, such as cabbages, kale, etc., if available, should be provided daily. During the winter it is a wise precaution to give suckling sows an ounce (about half a wineglassful) of good quality cod-liver oil in their food, and to include about a teaspoonful of the oil per head in the food for the young pigs when they commence to eat. The use of cod-liver oil should be discontinued after the young pigs are weaned.

The feeding of separated milk during the weaning stages is very beneficial and aids in preventing a set-back which is a frequent occurrence at this period. If supplies of separated milk are available, therefore, at least one quart per head daily should be given, along with a good meal mixture. Particulars of suitable meal mixtures for young pigs and for fattening pigs are given in Leaflets Nos. 45 and 35, respectively, and on page 369 of this issue. During mild, dry days it is also an advantage to allow sows and young pigs out for a run on fresh, clean pasture throughout the winter months. A daily run, in addition to providing exercise, promotes good thriving and health.

SEASONAL GARDEN AND ORCHARD NOTES.

PLANTING OF FRUIT TREES.—The planting of apple trees should be undertaken only when the ground is in a moderately dry state; it is better to delay this work than to plant when the soil is sodden with rain. Cultivated ground in good heart, such as potato ground, is very suitable for apple trees. The trees which are not more than three years old should be selected for planting and should be planted firmly but not deeply. When the ground has settled, the trees should be securely staked and then pruned hard back. Plum and pear trees, currant and gooseberry bushes, and raspberry canes may also be planted now.

PRUNING.—The pruning of established apple trees should be undertaken as soon as the bulk of the leaves have fallen. The removal of surplus weak growths, and of diseased, dead and crossing branches, is very important in the production of large, clean apples. Trees which are overcrowded are difficult to spray thoroughly, and require a greater quantity of the spray fluid. Notes on the method of pruning apple trees are given in Leaflet No. 34.

SPRAYING OF FRUIT TREES.—Supplies of tar-oil and of mineral oil for the making up of winter washes should be ordered without delay so that advantage of suitable weather on every occasion may be taken to get the winter spraying done under the most favourable conditions. Tar distillate sprays should be applied to apple trees of the varieties Grenadier, Beauty of Bath and Newton Wonder, not later than the middle of January.

MANURING APPLE TREES.—Orchards of established apple trees should receive an annual dressing of from 2 to 4 cwt. per acre of sulphate of potash. This may be applied now before the soil becomes too wet with the winter rains.

RHUBARB.—The old leaves of rhubarb should now be removed from the crowns, and any crowns intended for forcing should be lifted and left exposed for some days before being placed in the forcing quarters. The beds should be cleared of all weeds and lightly forked over, and the crowns protected from frost by a mulch of strawy horse manure.

WINTER CULTIVATION.—The digging or trenching and the manuring of ground as it becomes vacant should be continued. This work should not, however, be attempted when the ground is very wet or covered with snow.

SEASONAL POULTRY-KEEPING NOTES.

FEEDING OF LAYING STOCK.—Now that egg prices have reached a high level, every effort should be made to obtain maximum egg production from the laying flock. Suitable feeding is the first essential for obtaining high egg-production, and it is also important to ensure that the birds consume sufficient food for their requirements during the short winter days. A slightly heated mash, wet with separated milk if available, should be given once daily, while the dry mash hoppers should be open to the birds at all times. Examples of suitable laying mashes for feeding to hens are given on page 369 of this report, and also in Leaflet No. 5.

GRAIN FEEDING.—Two feeds of grain should be given daily during the winter months. A suitable grain mixture is equal parts cracked maize and oats. If home-grown wheat is available, or can be purchased at a reasonable rate, the mixture may consist of 2 parts cracked maize, 1 part oats, and 1 part wheat. The morning feed of grain should be scattered in the house litter, while the evening allowance should be given in a trough just before the birds go to roost. During cold weather, the evening feed of grain should consist of cracked maize only.

DRINKING WATER.—An adequate supply of fresh, clean water should be always available if a high level of production is to be obtained. Eggs contain a high percentage of water, and unless the birds can obtain sufficient, production will suffer. If the water is very cold or is frozen, the birds will not drink sufficient for their requirements and, accordingly, during spells of cold weather, it is an advantage to heat the water slightly.

GREEN FOOD AND SHELL-MAKING MATERIAL.—A plentiful supply of these is necessary in the diet of the laying bird. Green food aids the well-being of the bird, and is an indirect help in obtaining good production, while shell-making materials are required by the hen not only to enable her to produce eggs but to sell them properly. Oyster shell and limestone grit, or a mixture of these two, are suitable forms of shell-making material, while freshly-cut turnip tops, cabbage or kale, will supply suitable green food.

HOUSING AND MANAGEMENT.—Unless the birds are housed and managed properly, good feeding will not produce the desired results, and frequently, poor production can be attributed to faulty housing and management. The houses should be dry, well-lighted, well-ventilated, free from draughts, and capable of providing ample perching and scratching accommodation. During cold wet days, it is an advantage to allow the birds to remain indoors, and the house should be large enough to permit of this being done. Draughts in the house should be particularly guarded against, as should also overcrowding. There is nothing so conducive to the spread of colds and other infectious ailments in the flock as overcrowding the birds in draughty houses. Overcrowding may also cause outbreaks of feather picking and cannibalism to occur.

LITTER.—The litter in the house should be changed frequently and never allowed to remain in the house after it has become soiled and damp. Dirty litter is also conducive to the appearance and spread of colds amongst the birds, and may, in addition be a means of increasing infestations of insect pests. The litter in the nest boxes should also be maintained in a fresh, clean condition, to prevent soiling and staining of the eggs. The provision of a patch or path of gravel or cinders outside the door of the house aids in keeping the litter and nesting material clean, and in preventing the appearance of soiled and stained eggs.

Attention given to these details of management will aid in maintaining a high level of egg production throughout the winter, in addition to having a beneficial effect on the general health of the birds.

FEEDING OF BIRDS FOR BREEDING.—The birds in the breeding pens should now be fed so as to encourage egg production. If milk is available, it is excellent for speeding up the start of laying and for keeping the birds in a fit condition. The addition of about one quart of high-grade cod-liver oil to each cwt. of mash is also very beneficial, as it improves fertility and hatchability of the eggs, particularly where the birds are in pens. The grain ration of the birds should contain some wheat and maize in addition to oats.

MATING OF BIRDS.—Cockerels should be placed in the pens at least ten days before eggs for hatching are required, and it is a good plan to test fertility by setting a hatch under a hen before incubator lots are put down.

PREPARATIONS FOR HATCHING.—Preparations should be made for hatching in good time. Incubators should be carefully examined and tested to ensure that all working parts are in good order. Particular attention should be paid to thermometers and capsules, as these are most important for good hatching results. The accuracy of the thermometer can be ascertained by testing it against a clinical thermometer in water heated to about 100 degrees Fahrenheit. A ready means of ascertaining if the capsule is working is to see if it expands when held between the finger and thumb in front of a fire, or by seeing if the damper over the lamp is raised after the temperature rises in the incubator.

DISINFECTION OF INCUBATORS.—All incubators should be thoroughly cleaned and disinfected at the beginning of the hatching season, and again after each hatch is completed. Disinfection may be carried out by sprinkling a solution of formalin on the felts and leaving the machine closed for a day. A suitable strength of solution is an eggcupful of formalin in a cupful of water. In addition, the incubator should be fumigated with potassium permanganate and formalin. To do this, two teaspoonsful of potassium permanganate crystals should be put in a tin saucer placed on the egg-tray, and two table-spoonsful of formalin poured over the crystals, taking care to close the incubator immediately. Further particulars regarding disinfection and fumigation of incubators and chicken rearing appliances are given in Leaflet No. 59, while hints on the management of incubators are given in Leaflet No. 20.

TURKEY FATTENING.—Attention should now be directed to the fattening of turkeys intended for the Christmas market. The production of well-finished birds having firm white juicy flesh, should be aimed at, and this cannot be obtained unless the birds are properly fed. Foods, such as barley meal, pol-lards, Sussex-ground oats, or home-grown finely ground oats, boiled potatoes and milk are excellent both for fattening and for producing white flesh.

Two feeds of soft mash should be fed in troughs daily, and only such quantities given as will be readily cleared up. The practice of leaving large quantities of food before turkeys is not only a wasteful one but may also retard fattening, by causing a loss of appetite in the birds. Should loss of appetite occur, the omission of a meal, giving only sour milk to drink, will usually set matters right. After the evening meal of soft mash has been eaten, a supply of grain should be given; this will usually be greedily eaten and will sustain the birds throughout the night.

TURKEYS FOR BREEDING.—If not already done, turkeys intended for retention for breeding, or for sale as breeding stock, should be selected without delay and kept apart from the fattening flock. Only birds of good quality, well-developed, with plenty of stamina and vigour, should be selected. While turkeys of smaller size than formerly are now in best demand, it is a grave mistake to retain undersized birds and those of “weedy” type for breeding. Such birds will inevitably produce offspring which would not only be delicate and difficult to rear, but also be of poor quality. Quality in a turkey is of first importance in the market.

The birds selected for breeding should be fed on less fattening and more bulky foods than the fattening flock, as indicated in last month's Report.

GEESE.—Geese for marketing at Christmas should be confined to a small area and fed on a soft mash consisting of boiled potatoes, maize meal and buttermilk. The quantity of water supplied should be limited to encourage the birds to eat sufficient mash.

ANNOUNCEMENTS AND REMINDERS.

GENERAL.

LICENSING OF BULLS AND BOARS.—Bulls which were calved during the first six months of this year must be licensed by the 31st March, 1938. Boars which were farrowed on or before the 30th September, 1937, must be licensed by the 31st January next. Applications for licences for both bulls and boars should be lodged with the Ministry as soon as possible, but not later than the 31st December next. Application forms for licences for bulls and boars may be obtained from any Police Barracks, from the Secretary, County Committee of Agriculture, or from the Ministry. The keeping of unlicensed bulls or boars is likely to lead to a prosecution.

PREMIUM BULLS.—Farmers wishing to keep premium bulls in 1938 should make application immediately to the Secretary, Committee of Agriculture for the County in which the applicant resides.

SUPPLY OF FOREST TREES.—The Scheme for the supply of young forest trees from the Ministry's nurseries to farmers at reduced prices is again in operation. Full particulars will be sent, on request.

COUNTY POULTRY STATIONS.—Eggs for hatching may now be obtained from the County Poultry Stations. Lists, giving the names and addresses of station-holders can be obtained from the Secretary of the County Committee of Agriculture free, on request.

ACCREDITED POULTRY FARMS.—The Accredited Poultry Farm Scheme is again in operation this season, and lists giving the names and addresses of owners of these farms from whom hatching eggs may be obtained will be available soon, and will be sent free, on request, to those applying for copies.

MEETING OF POULTRY BREEDERS.—The annual meeting of poultry breeders, at which the cups, medals, etc., won at the Ministry's laying test, will be presented to the winners, will be held in the Y.M.C.A. Minor Hall, Wellington Place, Belfast, on Friday, 3rd December, at 1-30 p.m. All poultry-keepers are invited to attend.

REPORT OF FIFTEENTH EGG-LAYING TEST AT STORMONT.—This report is now being printed, and copies will be available soon.

LEAFLET ON LIMING OF LAND.—A new leaflet entitled, "Lime and Liming", is at present being printed. This leaflet gives useful information on lime and

its use in agriculture. Farmers who are taking advantage of the Land Fertility Scheme, and applying lime, should obtain a copy of this leaflet. Supplies will be available soon, and copies may be obtained free, on request. Copies of other leaflets mentioned in this Report may also be obtained free, on request.

SCHOOLS.—The next session at the Ulster Dairy School, Cookstown, and at the North-West School, Strabane, begins on the 4th January, 1938. Further particulars regarding the courses of instruction provided at these Schools are given on page 371.

WINTER AGRICULTURAL CLASSES.—These classes are at present being held at the following centres :—

County Antrim : Bushmills, Ahoghill, Crumlin and Creavery.

County Armagh : Cavanbellaghy and Tullyheron.

County Down : Carrowdore, Killyleagh, Newry and Kilkinamurray.

County Fermanagh : Knockraven and Tubrid.

County Londonderry : Garvagh and Articlave.

County Tyrone : Clanabogan, Dunmoyle (Clogher), Donemanagh, Killeter, Aghnahoe (Ballygawley), and Kilnaslee (Donaghmore).

Young men from the districts in which these classes are being held are strongly advised to make a special effort to attend so as to gain the advantages which the courses of instruction confer. The instruction is given free and there is no entrance examination. Full particulars regarding the courses of instruction are given in Leaflet No. 60.

LECTURES.—The following lectures on the Land Fertility Scheme have been arranged by the County Committees of Agriculture of the Counties mentioned :

County.	Day and Date.	Centre.	Time.
Antrim	Mon., 15th Nov.	The Old Orange Hall, Magheramorne.	8-0 p.m.
"	Wed., 17th Nov.	The Schoolroom, Monkstown Village.	do.
"	Fri., 19th Nov.	Straidnahanna P.E. School.	do.
"	Wed., 24th Nov.	Tardree P.E. School.	do.
"	Fri., 26th Nov.	Tannaghmore P.E. School.	do.
"	Mon., 29th Nov.	Magheragall P.E. School.	do.
Down	Mon., 15th Nov.	Bann School, Laurecetown.	7-30 p.m.
"	Thurs., 23rd Nov.	Star of the Sea School, Kilkeel.	8-0 p.m.
"	Fri., 26th Nov.	Coope Hall, Killyleagh.	7-30 p.m.

County.	Day and Date.	Centre.	Time.
Fermanagh	Fri., 19th Nov.	Grogey P.E. School.	7-30 p.m.
"	Fri., 3rd Dec.	Slee P.E. School.	do.
Tyrone	Wed., 17th Nov.	Letterbratt P.E. School.	7-0 p.m.
"	Fri., 19th Nov.	Mayne P.E. School.	do.
"	Fri., 19th Nov.	Crosscavanagh P.E. School.	do.
"	Wed., 24th Nov.	Corrick P.E. School.	do.
"	Fri., 26th Nov.	Corenarry P.E. School.	do.
"	Fri., 26th Nov.	Crossdermot P.E. School.	do.
"	Tues., 30th Nov.	Aghyaran Parochial Hall.	do.
"	Fri., 3rd Dec.	Tattynure P.E. School.	do.
"	Fri., 3rd Dec.	Eglis P.E. School.	do.
"	Wed., 8th Dec.	Ballylaw P.E. School.	do.
"	Fri., 10th Dec.	Gillygooley P.E. School.	do.
"	Fri., 10th Dec.	Kerrib P.E. School.	do.

LECTURES ON POULTRY KEEPING.—The following lectures, which will be illustrated with lantern slides, have been arranged by County Londonderry Committee of Agriculture:—

Day and Date.	Centre.	Time.
Mon., 15th Nov.	Ballynease P.E. School, Portglenone.	7-0 p.m.
Wed., 17th Nov.	Innisrush P.E. School, "	do.
Mon., 22nd Nov.	Coolshinney P.E. School, Magherafelt.	do.
Wed., 24th Nov.	Aughrim P.E. School, "	do.
Mon., 29th Nov.	Mayogall Hibernian Hall.	do.
Fri., 3rd Dec.	Ringsend P.E. School, Garvagh.	do.
Mon., 6th Dec.	Drummullen P.E. School, Moneymore.	do.
Fri., 10th Dec.	Moneyneena P.E. School, Draperstown.	do.

LECTURE ON FRUIT AND VEGETABLE GROWING.—A lecture on this subject will be given by the Horticultural Instructor for County Down in Magherally P.E. School, on Monday, 22nd November, at 8 p.m.

PRUNING DEMONSTRATION.—A demonstration on the pruning of fruit trees will be given by the Horticultural Instructor for County Londonderry, in Miss Archibald's orchard, Orchardtown, Eglinton, on Thursday, 25th November, commencing at 2-30 p.m.

WINTER RATIONS FOR STOCK-FEEDING.

Now that the winter feeding period has commenced, farmers will be giving attention to the making up of rations for the various classes of farm stock. The feeding of stock during the winter period necessitates careful consideration if successful and profitable results are to be obtained. The animal during this period is dependent in most cases on the food given and cannot supplement any deficiencies in the ration as is the case when outdoor facilities for obtaining additional food are available. The output received from an animal, whether it be in the form of quantity of milk, beef or eggs is governed largely by the feeding supplied, so that any deficiencies in the ration will have an adverse effect on the quantity and quality of output. Moreover, indifferent feeding may also adversely affect the health of farm stock and thus increase the risk of the animals becoming affected with ailments and diseases. It is, therefore of the utmost importance that careful attention be given to the making up of rations, and that rations which will be suitable for the class of stock to which they are to be fed are used.

Many farmers are of the opinion that the use of properly balanced mixtures is a more expensive practice than the feeding of indifferent rations made up from the cheapest foods available. This is a fallacy which requires little consideration to dispel. The slightly increased cost of a good balanced meal mixture is more than offset by the results obtained, and it is foolish economy to attempt to save expense by the use of cheap and unsuitable foods.

The use of properly balanced food mixtures for cattle, pigs and poultry, does not necessarily imply that all the constituents of the mixture must be purchased and no home-grown foods used. Mixtures containing foods grown on the farm, such as oats, barley and wheat, along with a small proportion of a purchased food, have given excellent results, and the inclusion of as large a proportion of home-grown foods as possible is strongly recommended. With the exception of milk, the majority of the foods grown or produced on the farm are rich in starchy or fat-forming material, and low in protein content. As the latter material is essential for all stock for full growth, development and production, it is necessary on most farms to purchase foods rich in protein material. Protein-rich foods are the most expensive to buy, so that it is important to purchase those which offer best value for money.

To assist farmers in the selection of foods to purchase, the prices of the most commonly used cakes and meals are obtained at various centres each month by the Ministry, and from these prices the average costs of the foods are ascertained. The foods are divided into three main groups, protein-rich foods, medium protein-rich foods, and starchy foods, and particulars of the average prices at which these are offered, along with information on the valuing of foods, are given monthly in this Report (see page 379 for this month's prices). Farmers can ascertain, therefore, at a glance which food in a particular group offers best value for money, and can purchase accordingly. With this information at hand suitable and economical rations for the different classes of stock can be made up, provided the foods comprising the mixtures are included in the correct proportions so that the stock will receive adequate amounts of the nutriment necessary.

To enable farmers and stock feeders to compound suitable rations, a list of meal mixtures for different classes of stock is given below. Where supplies of separated milk, skim milk or buttermilk are available, the protein-rich foods, i.e., soya bean meal, meat meal and fish meal, and the mineral mixtures may be omitted from the rations for pigs and poultry.

Formula (Parts by weight).	Average Composition of Mixture.
For Dairy Cows (1) 3 parts crushed oats 2 parts maize meal 1 part bran 2½ parts decorticated cotton cake or 2 parts decorticated earthnut cake. With 3 lb. mineral mixture (equal parts ground limestone or chalk, steamed bone flour and common salt) to each cwt. of meal mixture. (2) 2 parts crushed oats 2 parts bean meal 1 part coarsely ground wheat 1½ parts decorticated cotton cake. With mineral mixture as for (1) (3) 2 parts maize meal 1 part pollard 1 part bran 1½ parts decorticated cotton cake or 1½ parts soya bean meal. With mineral mixture as for (1)	
For Fattening Cattle 2 parts crushed oats 2 parts maize meal 1 part decorticated earthnut cake. With 2 lb. mineral mixture (3 parts ground limestone, 1 part common salt) to each cwt. meal mixture.	19.0 per cent. protein 5.9 per cent. oil 7.0 per cent. fibre 20.0 per cent. protein 4.0 per cent. oil 7.0 per cent. fibre 20.5 per cent. protein 5.0 per cent. oil 5.5 per cent. fibre 17.0 per cent. protein 5.5 per cent. oil 5.5 per cent. fibre

Formula (Parts by weight).	Average Composition of Mixture.
For Young Growing Cattle 2 parts crushed oats 1 part maize meal 1 part decorticated earthnut cake With similar mineral mixture as for fattening cattle.	19.0 per cent. protein 5.8 per cent. oil 6.4 per cent. fibre
For Fattening Pigs (1) 2 parts barley meal 2 parts maize meal 2 parts pollard 1 part flaked maize 1 part bran 1 part soya bean meal With similar mineral mixture as for fattening cattle. (2) 3 parts barley meal 3 parts maize meal 2 parts pollard 1 part bran 1 part meat meal With 1 lb. mineral mixture as above to each cwt. of meal mixture.	16.2 per cent. protein 3.4 per cent. oil 4.5 per cent. fibre 17.0 per cent. protein 3.7 per cent. oil 4.0 per cent. fibre
For Sows with Litters. 3 parts maize meal 1 part flaked maize 2 parts bran 2½ parts pollard 1½ parts high grade meat meal. With from 1 to 2 lbs. mineral mixture as above to each cwt. of meal mixture.	19.5 per cent. protein 3.6 per cent. oil 4.2 per cent. fibre
For In-Pig Sows 4 parts maize meal 4 parts pollard 2 parts bran With 1 lb. mineral mixture as above to each cwt. meal mixture.	14.0 per cent. protein 4.0 per cent. oil 5.0 per cent. fibre
For Young Chickens 4 parts bran 2 parts sharps (fine pollard) 1 part Sussex ground oats 1 part maize meal 1 part fish meal (60 per cent. protein).	18.2 per cent. protein 4.0 per cent. oil 6.5 per cent. fibre
For Growing Birds 3 parts bran 4 parts sharps 2 parts Sussex ground oats 1 part maize meal ½ part fish meal, or meat meal.	13.5 per cent. protein 4.3 per cent. oil 6.5 per cent. fibre
For Laying Pullets. (1) 4 parts pollard 2 parts bran 2 parts maize meal 1 part Sussex ground oats 1 part fish meal (60 per cent. protein).	17.0 per cent. protein 4.5 per cent. oil 5.0 per cent. fibre

Formula (Parts by weight).	Average Composition of Mixture.
(2) 4 parts pollard 2 parts bran 2 parts maize meal 1 part Sussex ground oats $\left\{ \begin{array}{l} \frac{1}{2} \text{ part fish meal} \\ \frac{3}{4} \text{ part soya bean meal} \end{array} \right.$ $\frac{1}{2}$ lb. common salt per cwt. meal mixture.	16.8 per cent. protein 4.0 per cent. oil 5.4 per cent. fibre
For Breeding Stock 3 parts bran 2 parts pollard 2 parts coarsely ground wheat 2 parts maize meal 1 part fish meal, or meat meal 1 pint cod-liver oil to each 4 stones of mash.	17.4 per cent. protein 3.7 per cent. oil 4.7 per cent. fibre

The average composition (percentages of oil, protein and fibre) of the above rations are given. As many farmers are not familiar with the average composition of suitable rations for the various classes of stock, it is felt that this information will be of interest and value. It should be noted, however, that the composition of each ration as stated is that applicable in the case of rations made from foods of good average quality.

The figures of composition will also be of value to purchasers of proprietary, ready-mixed rations for stock feeding. In accordance with the Fertilisers and Feeding Stuffs Act a declaration must be given by sellers of ready-mixed rations to purchasers showing the percentages of oil, protein and fibre contained in the ration. Purchasers of such rations should at the time of purchase, ensure that they are supplied with the figures of composition. If the figures differ substantially from those given above, the ration has either been prepared from foods which are not of average quality, or the foods have not been blended in the proper proportions. The percentage of protein should be at least as high as that stated in the composition figures given above, and the percentage of oil and fibre not appreciably higher than those given above. It is particularly important to see that the oil content of rations for fattening pigs is kept as low as possible.

Further, the composition figures will be a guide in determining whether or not the price asked for the mixed ration is a reasonable one. It is an easy matter to determine the cost of a ton of any of the mixtures given in the above table at the current prices of the different foods comprising them. If, therefore, the ready-mixed ration of a composition similar to that of the home-mixed ration is offered at a price in excess of that at which the home-mixed ration can be obtained, it is obvious that the latter will be the more economical to use.

In all cases of doubt regarding the quality of purchased ready-mixed rations, the Agricultural Instructor for the district should be consulted.

SCHOOLS NEWS.

ULSTER DAIRY SCHOOL, COOKSTOWN.

For the term which commenced on the 12th October, the following new pupils were admitted to begin the course of training :—

- Miss M. G. Atcheson, Woodbury, Eglinton, Londonderry.
 „ M. Caskey, Edenmore House, Limavady, Co. Londonderry.
 „ P. G. Corr, Bluestone, Killyleagh, Co. Down.
 „ J. S. Fulton, Thornhill, Ballykelly, Co. Londonderry.
 „ F. O. Gilmer, Rashee, Ballyclare, Co. Antrim.
 „ K. Gormley, Carnanreagh, Claudy, Co. Londonderry.
 „ M. B. Jones, Bar of Slattanagh, Garrison P.O., Co. Fermanagh.
 „ H. M. E. Kyle, Mournebeg, Strabane, Co. Tyrone.
 „ M. I. Logan, Brae-Side, Portstewart, Co. Londonderry.
 „ M. M. Maguire, Roscor, Co. Fermanagh.
 „ E. F. Martin, Ferndale, Dromore, Co. Down.
 „ M. C. Martin, Longstone House, Annalong, Co. Down.
 „ S. E. Mawhinney, Ballywoodock, Templepatrick, Co. Antrim.
 „ E. McCluney, Dunsilly, Antrim.
 „ S. McCormack, Tulnacross, Cookstown, Co. Tyrone.
 „ B. A. McCurdy, Post Office, Rathlin Island, Co. Antrim.
 „ M. McEldowney, Gortinure, Maghera, Co. Londonderry.
 „ B. McKenna, Dernasell, Augher P.O., Co. Tyrone.
 „ W. G. Orr, Mealough House, Purdysburn, Belfast.
 „ M. E. Patterson, Laurel Bank, Omagh, Co. Tyrone.
 „ A. Shankey, Sessia Scot, Rock, Dungannon, Co. Tyrone.
 „ I. Stewart, Ballymacpeake, Portglenone, Co. Antrim.
 „ J. McC. Wood, Woodmount Poultry Farm, Herdstown, Donaghadee, Co. Down.
 „ M. J. Wright, Lessize, Rathfriland, Co. Down.

Applications for admission to the term which will begin on the 4th January, 1938, are now being received by the Ministry, and as applications are dealt with in the order in which they are received, girls who wish to take a course of training in the year 1938 are advised to send in their applications as soon as possible. The School Prospectus contains an application form, and copies of this Prospectus may be obtained, free of charge, from the Secretary of any County Committee of Agriculture, from the local Instructor in Poultry-keeping, from the Lady Superintendent, Ulster Dairy School, Cookstown, and from the Secretary, Ministry of Agriculture, Stormont.

NORTH-WEST SCHOOL, STRABANE.

The Third term of the year 1937 ended at this School on the 1st October, and there were 24 pupils in the class, all of whom held Scholarships awarded by the various County Committees of Agriculture. The number of scholarship holders from each County was as follows :—

County	Antrim	..	3
„	Down	..	6
„	Fermanagh	..	3
„	Londonderry	..	5
„	Tyrone	..	7

The following pupils are now in residence at the School as scholarship holders for the term which commenced on the 12th October:—

County Antrim.

- Miss E. B. Higgins, Lignamonagh, Martinstown. (2nd Term Student.)
 „ J. McCluney, Galgorm Parks, Gracehill P.O.
 „ S. Rainey, Galgorm Street, Ballymena.
 „ Marjorie Rea, 8 Roddens, Larne.
 „ M. J. Thompson, Ballee, Ballymena.

County Armagh.

- Miss E. Donaghy, Tullydonnell, Silverbridge, Newry.
 „ M. J. B. Richardson, Shanecracken, Markethill.

County Down.

- Miss E. K. Crawford, Broclough, Loughinisland.
 „ M. E. Ellison, 17, Hyde Terrace, Newry.
 „ K. McGrady, Backaderry, Leitrim, Banbridge.

County Fermanagh.

- Miss R. Dane, Killee, Coa P.O., Ballinamallard.
 „ E. J. Foster, Drumsoo, Magheraveely, Newtownbutler.
 „ M. E. McManus, Derryhowlagh, Belnaleck, Enniskillen.

County Londonderry.

- Miss M. E. Conn, The Grange, Castlerock.
 „ A. Gray, Ballinacross, Knockloughrim.
 „ B. Henry, Ballymacpeake, Portglenone.
 „ S. J. McCloy, Tamneymullan, Maghera.
 „ S. McKenna, Swateragh.

County Tyrone.

- Miss B. Campbell, Fawney, Donemana.
 „ E. R. Keenan, Sheskinshule P.O., Omagh.
 „ A. McAlinney, Tullyvalley, Seskinore, Omagh.
 „ S. A. O'Kane, Magherenney, Drumquin.
 „ M. H. Owens, Skelgagh, Clogher.
 „ M. Teague, Cloughfin, Sixmilecross.

The County Committees of Agriculture are offering a limited number of scholarships to cover the cost of tuition, board and residence at this School for the term which will commence on the 4th January next, and girls desirous of being considered for the award of these scholarships should submit their applications as soon as possible to the Secretary or Agricultural Organiser of the County Committee of Agriculture for the County in which they reside. Copies of the School Prospectus can be obtained from the Secretary of the County Committee of Agriculture, the local Instructor in Poultry-keeping, the Lady Superintendent, North-West School, Strabane, and the Secretary, Ministry of Agriculture, Stormont.

GREENMOUNT AGRICULTURAL AND HORTICULTURAL COLLEGE.

The following are the names of candidates who were successful in the recent competitive examinations for scholarships valued at £65, awarded by the various County Committees of Agriculture, and tenable during the 1937/38 session at the above College.

County Antrim.

A. Burns, Ballylesson, Glynn, Belfast.
 R. Burns, Ballyquillan, Crumlin.
 S. Busby, Burnfoot Farm, Gransha, Islandmagee.
 W. J. Crawford, Parkmore.
 John Geary, Magheramorne, Belfast.
 R. F. Girvan, 19, Hopefield Avenue, Belfast.
 S. McBride, Ballyreagh, Ballyvoy, Ballycastle.
 F. K. McCaughan, Duncarbit, Ballycastle.
 George Rea, Fort-Vue, Rasharkin.
 E. G. Sherrard, Aughnabrack House, Ligoniel, Belfast.
 Wm. Turtle, Carncoagh, Rathkenny.

County Armagh.

C. J. Edwards, Boydston, Markethill.
 S. R. A. Wright, The Residence, Townsend P.E.S., Newtownhamilton. (Horticulture.)

County Down.

J. A. Bates, Ravenbank, Ballygowan, Belfast.
 J. Beattie, Lisowen, Saintfield.
 P. B. Corr, Crobane, Newry.
 W. D. G. Cummins, Hillcrest, Donaghmore, Newry.
 Wm. Dalzell, Ballyboley, Greyabbey.
 J. H. Jenkins, Carrickdrumman, Poyntzpass, Newry.
 J. I. McDowell, Rose Cottage, Ballydown, Banbridge.
 F. W. McMordie, Solitude, Ballygowan, Belfast.
 W. C. Orr, Cavan, Rathfriland.
 L. G. Patterson, Carricknaveigh, Boardmills, Lisburn.
 J. Robinson, Ballybuttle, Millisle, Co. Down.
 J. H. Savage, Thomastown, Portaferry.
 D. W. Shaw, Drumaroad, Castlewelling.

County Fermanagh.

W. J. Costello, Rossmacawinney, Florencecourt.
 D. Taylor, Salloon, Ballinamallard.

County Londonderry.

Wm. Carmichael, Gortanewry, Moneymore. (Horticulture.)
 J. A. Cochrane, Ballinteer, Macosquin, Coleraine.
 J. K. Dougherty, Ballymacallion, Dungiven.
 F. B. Hunter, Gortree, Drumahoe.
 W. G. Huston, Kiltinney, Coleraine.

County Tyrone.

P. Gormley, Plumbridge, Omagh.
 J. W. Hughes, Glengeen, Trillick. (Horticulture.)
 J. A. Magee, Gratitude House, Toberlane, Cookstown.
 R. S. W. McKinney, Legatiggle, Fintona.

All are holders of Scholarships in Agriculture except where stated.

EGG LAYING TEST AT STORMONT.

The Sixteenth of the series of egg-laying tests conducted by the Ministry began on 1st October, 1937. In the interval following the return of the birds in the previous test to their owners and the receipt of the birds for the succeeding test, the entire plant was reconditioned. The houses were first cleaned out thoroughly, then scrubbed internally with boiling water and soft soap and sprayed with disinfectant solution. The droppings' boards and perches were painted with creosote, while the outsides of the houses were also dressed with that material. All mash hoppers, drinking vessels, etc. were scalded. The grass runs were sprayed with copper sulphate solution after the grass had been cut as bare as possible. Later they received dressings of burnt lime and of basic slag.

Any house and run in which birds which were affected with tuberculosis, coccidiosis, or worm parasites were accommodated in the previous test were specially marked and will be left vacant of birds for a year. These houses and runs will, therefore, receive two separate treatments, as outlined above, before new birds are admitted to them. It is thus seen that drastic precautions are taken to ensure that the houses and runs at the test are clean, thoroughly disinfected, and as safe as it is possible to make them for the new birds.

There are 118 pens of 6 pullets each participating in this sixteenth test. This shows a marked reduction as compared with the previous test—a reduction which is spread over all the Sections with the exception of Section 4 (any breed other than White Wyandotte, White Leghorn, and Rhode Island Red), and Section 6 (Club entries). The following are particulars of the Sections with the number of pens in each:—

Section 1	White Wyandottes (Open)	..	22 pens	
„ 2	White Leghorns (Open)	..	9 „	
„ 3	Rhode Island Reds (Open)	..	26 „	
„ 4	Any other pure Breed (Open)	..	15 „	{ 13 Light Sussex 2 Buff Rocks
„ 5(a)	White Wyandottes (Stationholders)	..	9 „	
„ 5(b)	White Leghorns (Stationholders)	..	7 „	
„ 5(c)	Rhode Island Reds (Stationholders)	..	18 „	
„ 6	Poultry Clubs and Young Farmers' Clubs—Any pure breed	..	12 „	{ 9 Rhode Island Reds 3 White Wyandottes

The number of birds of each breed represented in the test are:—

Rhode Island Reds	..	318
White Wyandottes	..	204
White Leghorns	..	96
Light Sussex	..	78
Buff Rocks	..	12
Total	..	708

The first four-weekly period of the test ended on the 28th October, and particulars of the leading pens in each Section as on that date are given below. Egg production during this initial period has been reasonably good, considering that a large number of the birds have fallen into a moult following the change to new quarters. Of the 8,181 eggs laid, 4,319 were each of 2 oz. or over in weight, and counted for the purposes of certificates and awards. This total gives a flock average of 11.5 eggs per bird. The averages for the first period of the two previous tests were 11.7 and 11.9.

The proportion of scoring eggs laid is lower than it was in the corresponding period of the previous test—52.7 per cent. as against 55.2 per cent.

As regards the averages in the different Sections, the White Wyandottes in Section 5(a) lead with an average of 14.0 eggs per bird, while the birds of the same breed in Section 1 are a good second with an average of 13.8 eggs per bird.

Five birds died during the period, all from peritonitis. This represents a mortality rate of 0.7 per cent. which is slightly less than the rate for the corresponding period of the previous test.

The following are particulars of the leading pens in each Section:—

SECTION 1. WHITE WYANDOTTES (OPEN).

Position.	No. of Pen.	Name and Address of Owner.	Number of eggs laid.				Test Score
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	19	Mr. J. C. Stewart, Balloo, Killinchy, Co. Down.	14	67	38	—	81
2	16	Mr. T. J. McMillan, Crossgar, Co. Down.	21	53	5	—	74
3	7	Lt.-Col. J. P. Galbraith, Clanabogan, Omagh, Co. Tyrone.	26	39	21	—	65
4	15	Miss E. Little, Ballywalter, Co. Down.	24	36	24	2	60

SECTION 2. WHITE LEGHORNS (OPEN).

1	26	Mr. T. J. McMillan, Crossgar, Co. Down.	15	49	24	—	64
2	28	Mrs. P. Rogan, Guinness, Dunmore, Ballynahinch, Co. Down.	5	31	41	2	36
3	23	Mr. W. D. Anderson, Ballyaugherty, Saintfield, Belfast.	5	17	45	11	22

SECTION 3. RHODE ISLAND REDS (OPEN).

Position.	No. of Pen.	Name and Address of Owner.	Number of eggs laid.				Test Score
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	39	Mrs. H. Farr, Elsneuk, Dundrum Road, Newcastle, Co. Down.	46	32	5	1	78
2	52	Mrs. G. S. Parker, Lakeside, Tullyveery, Killyleagh, Co. Down.	15	60	12	1	75
3	49	Mrs. J. McNeill, Drain's Bay, Larne, Co. Antrim.	24	47	6	—	71
4	38	Mr. R. A. Copeland, Blackskull, Dromore, Co. Down.	34	34	—	—	68

SECTION 4. ANY OTHER PURE BREED (OPEN).

1	67	Mr. R. Holmes, Moneycarrie, Coleraine, Co. Derry. (Buff Rocks)	55	47	5	1	102
2	62	Mrs. M. Benson, Killymoon, Cookstown, Co. Tyrone. (Light Sussex)	15	56	21	3	71
3	68	Mr. R. Holmes, Moneycarrie, Coleraine, Co. Derry. (Buff Rocks)	9	52	12	3	61

SECTION 5(a). WHITE WYANDOTTES (STATIONHOLDERS).

1	82	Mrs. M. Rodgers, Ballyginney, Dundrum, Co. Down.	43	33	19	—	76
2	83	Mrs. M. J. Veitch, Knockninny, Thompson's Bridge, Co. Fermanagh.	30	36	12	—	66
	76	Miss A. Brown, Ballyhill, Crumlin, Co. Antrim.	26	40	49	1	66

SECTION 5(b). WHITE LEGHORNS (STATIONHOLDERS).

1	91	Miss I. J. Magill, Mulloughdrin, Dromara, Co. Down.	61	37	26	—	98
2	89	Miss I. Gilmer, Rashee, Ballyclare, Co. Antrim.	10	63	14	—	73
3	86	Mrs. J. Brown, Gorsebank, Culcrum, Co. Antrim.	6	50	28	—	56

SECTION 5(c). RHODE ISLAND REDS (STATIONHOLDERS).

Position.	No. of Pen.	Name and Address of Owner.	Number of eggs laid.				Test Score.
			1st Grade	Super Grade	2nd Grade	Below 2nd Grade	
1	102	Mrs. R. McGiffert, Rathcunningham, Toye, Co. Down.	28	66	14	—	94
2	104	Miss S. McKee, Ardmillen, House Killinchy, Co. Down.	6	71	40	1	77
3	93	Mrs. H. H. Dickson, Lower Coagh, Co. Tyrone.	11	65	16	1	76

SECTION 6. POULTRY CLUBS AND YOUNG FARMERS' CLUBS.

1	117	Crossgar Poultry Club, Co. Down. (Rhode Island Reds.)	21	36	13	—	57
2	114	Ballywalter Young Farmers' Club, Co. Down. (Rhode Island Reds.)	20	34	5	—	54
3	118	Crumlin Poultry Club, Co. Antrim. (Rhode Island Reds.)	2	29	16	—	31

“Test Score” means the total of the Super Grade and First Grade eggs.

It is of particular interest to see a pen of Buff Rocks leading in the entire test, and a pen of White Leghorns a very good second, with only 4 scoring eggs less but with a total of 16 more when the 2nd Grade eggs are added in both cases. This pen of Leghorns has the distinction of producing an average of nearly 21 eggs per bird during the 28 days the test has been in progress.

Mr. Copeland's pen of Rhode Island Reds (4th in Section 3) is worthy of mention for the fact that all the eggs laid were of 2 oz. or more in weight.

PRICES OF FEEDING STUFFS AT SPECIFIED CENTRES.

The following table shows the retail cash prices per cwt. of Feeding Stuff's at 1st November, 1937, in ten representative centres in Northern Ireland.

	Antrim	Armagh	Ballymena	Belfast	Castlewellsan	Coleraine	Dunannon	Enniskillen	Omagh	Strabane
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
PROTEIN FOODS:										
Linseed (whole)	12 6	16 0	16 0	16 0	20 0	18 6	20 0	16 0	20 0	17 0
Linseed Cake, home-made	10 6	12 0	12 0	12 0	11 0	—	12 0	11 9	11 9	—
Linseed Cake, foreign	—	11 0	10 7½	11 0	—	12 6	11 6	9 6	10 9	11 0
Linseed Cake Meal	10 6	11 6	11 0	11 0	11 0	11 6	11 6	12 0	11 0	11 6
Cotton Cake, decorticated	10 0	—	9 6	10 0	10 3	10 0	10 6	10 6	—	10 6
Earthnut Cake, decorticated	11 3	—	9 9	10 0	—	10 3	9 0	10 6	10 0	9 9
Soya Bean Meal (extracted)	11 3	11 0	11 6	11 6	—	11 6	—	12 0	11 3	11 6
Fish Meal (60% protein)	17 0	17 0	16 0	16 0	—	16 6	17 0	16 0	16 6	17 0
Meat Meal (60% protein)	16 6	16 0	14 9	—	16 0	17 0	15 6	—	15 6	—
Meat and Bone Meal (40% protein)	—	11 6	—	10 0	—	13 0	11 6	12 0	—	12 3
MEDIUM PROTEIN FOODS:										
Palm Kernel Cake	9 3	—	9 6	8 0	—	—	—	—	9 9	—
Palm Kernel Meal	9 3	9 6	9 6	8 0	—	9 9	—	—	—	—
STARCHY FOODS:										
Maize (whole)	7 6	8 0	7 9	7 3	7 9	8 0	7 9	7 9	—	7 6
Maize Meal	8 3	8 3	7 9	8 0	8 3	7 9	8 0	8 0	8 0	8 0
Maize, Flaked	8 9	9 0	8 3	8 6	8 6	8 9	8 9	8 3	9 0	8 9
Wheat (whole)	13 6	10 6	11 0	10 6	11 6	12 6	10 8	10 0	—	—
Bran, Red	9 0	9 6	8 3	9 0	—	8 9	8 9	9 6	9 0	8 0
Bran, White	10 0	10 6	9 7½	10 0	10 0	10 0	10 6	10 9	10 6	11 0
Pollard, Brown	9 0	9 6	8 6	9 0	—	9 3	8 9	9 6	9 0	8 0
Pollard, White	—	10 6	9 0	10 6	10 0	10 0	10 6	10 6	10 0	11 0
Barley Meal	10 3	10 6	9 6	10 0	9 3	10 0	9 6	10 9	10 0	10 6
Tapioca Root	—	8 0	8 6	—	—	8 6	8 6	—	9 0	8 9
Flour	9 6	8 0	8 0	8 6	7 0	7 6	8 0	8 0	7 0	7 0
Oats (whole)	10 0	9 0	8 6	9 0	7 6	8 0	—	9 0	—	8 0
Crushed Oats	—	—	—	—	—	—	—	—	—	—

NON-CONCENTRATES:—The average prices at representative markets at the beginning of November, were as follows:—
 Potatoes (Main Crop), 2/8½d. per cwt.; Upland Hay, 62/7d. per ton; Meadow Hay, 44/6d. per ton;
 Oat Straw, 41/10d. per ton.

AVERAGE PRICES OF FEEDING STUFFS.

The following table shows the average retail cash prices per cwt. of feeding stuffs at 1st November, 1937, with comparative prices as at the first of the previous month; the costs per unit of protein equivalent and of starch equivalent are also given in respect of each month.

	Protein equivalent	Starch equivalent	Average price per cwt. at		Cost per unit of Protein equivalent		Cost per unit of starch equivalent	
			1st Nov.	1st Oct.	Nov.	October	Nov.	October
Protein Foods			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Linseed ..	19.0	119.0	17 3	17 5	18 2	18 4	2 11	2 11
Crushed linseed	19.0	119.0	18 8	18 10	19 8	19 10	3 2	3 2
Linseed cake								
(home-made)	25.0	72.0	11 7½	11 9	9 4	9 5	3 3	3 3
Linseed cake								
(foreign)	25.0	72.0	11 0	10 8	8 10	8 6½	3 1	3 0
Linseed cake meal	25.0	72.0	11 3	10 11½	9 0	8 9	3 2	3 1
Decorticated								
Cotton cake	35.0	71.0	10 2	10 2	5 10	5 10	2 11	2 11
Decorticated								
Earthnut cake	41.0	73.0	10 1	9 9	4 11	4 9	2 9	2 8
Extracted Soya								
Bean meal	38.0	64.0	10 2	11 4	5 4	5 11½	3 3	3 7
Fish meal								
(60% protein)	53.0	59.0	16 7	16 5	6 3	6 2	5 7	5 7
Meat meal								
(60% protein)	55.0	61.0	15 11	16 0	5 10	5 10	5 3	5 3
Meat & bone meal								
(40% protein)	36.0	44.0	11 9	11 9	6 6	6 6	5 4	5 4
Medium Protein Foods								
Palm kernel cake	17.0	75.0	9 1½	8 10	10 9	10 5	2 5	2 4
Palm kernel meal	17.0	75.0	9 2	9 1½	10 10	10 9	2 6	2 5
Starchy Foods								
Maize	6.8	81.0	7 8	7 6	22 6½	22 1	1 11	1 10
Maize meal	6.8	81.0	8 0	7 10	23 6	23 0	2 0	1 11
Flaked maize	8.6	83.0	8 8	8 5	20 2	19 7	2 1	2 0
Wheat	9.6	72.0	11 3	11 3	23 5	23 5	3 2	3 2
Red bran	10.0	43.0	8 10	8 11	17 8	17 10	4 1	4 2
White bran	10.0	43.0	10 2	10 3	20 4	20 6	4 9	4 9
Brown pollard	11.0	60.0	9 0	9 1	16 5	16 6	3 0	3 0
White pollard	11.0	60.0	10 3	10 2½	18 8	18 7	3 5	3 5
Barley meal	7.0	70.0	10 0	10 1	28 7	28 10	2 10	2 11
Oats	7.6	60.0	7 10	8 4	20 8	21 11	2 8	2 9
Crushed oats	7.6	60.0	8 7½	9 3½	22 9	24 5	2 11	3 1
Tapioca root flour	1.0	83.5	8 6½	8 6	170 10	170 0	2 0	2 0
Non-Concentrates								
Potatoes	0.6	18.0	2 8½	2 10	90 3	94 5	3 0	3 2
Upland hay	4.9	24.0	3 1½	3 1½	12 9	12 9	2 8	2 8
Meadow hay	4.6	31.0	2 3	—	9 9	—	1 6	—
Oat Straw	0.9	20.0	2 1	2 1½	46 4	47 3	2 1	2 1

The object of the foregoing tables, besides providing information regarding the prices of feeding stuffs and the trend of prices, is to give purchasers a

guide as to the economic purchase of supplies. It should be understood that the price per ton is not a sound basis on which to judge whether or not a particular food or grade of a particular food is good value for money. The composition of the foods is the only basis on which different grades can be compared. The value of foods of different kinds, but of the same nature in reference to market prices, can also be compared on this basis.

In the case of an artificial manure which supplies only one fertilising ingredient as, for example, sulphate of ammonia, which supplies nitrogen, the cost of the unit of nitrogen at the price charged can be determined quite readily by dividing the price per ton by the percentage of nitrogen in the sample, and the figure thus obtained is the cost of a unit of nitrogen. By this method the most economical source of nitrogen can be ascertained. Similarly, in the cases of phosphatic and potassic manures.

With feeding stuffs, however, the same method cannot be applied to determine comparative values. This is because every feeding stuff contains three important food constituents in varying proportions. These are (1) carbohydrates, (2) oils or fats, and (3) proteins or albuminoids. The carbohydrates comprise a group of substances such as starch, sugar and cellulose. These substances supply heat or energy to the animal, and the surplus goes to form fat. They are the fuel which the animal requires to keep the body "fires" burning. The oils of a feeding stuff are also heat and energy suppliers, and the surplus is stored as fat. The oils are approximately $2\frac{1}{2}$ times more valuable than the carbohydrates as heat and energy producers, but excess in a ration may lower its digestibility and cause digestive troubles. The proteins are the most valuable and most expensive food constituent. They contain nitrogen and are the part of the food from which products which contain protein are chiefly made. Thus the protein products, such as lean meat, milk and eggs, are formed principally from protein, and young, growing animals, dairy cows and laying hens must have an adequate quantity of protein for full growth, development and production.

While all animals require a certain amount of carbohydrates, oils and proteins, the relative amounts depend on the class of stock. For example, a two-year-old fattening bullock requires much less protein than a dairy cow in milk, and a fattening chicken less than a laying pullet.

There are wide differences in the composition of the different kinds of feeding stuffs. Some are rich in carbohydrates and, therefore, particularly valuable for fattening purposes. These include oats, maize, barley and wheat, and their products. Others are rich in protein and are valuable for producing flesh, milk and eggs. These include decorticated cotton cake, decorticated earlnut cake, meat meal and soya bean meal.

In the following table the composition of some of the commonly used feeding stuffs is shown—

	Water.	Protein.	Oil.	Carbohydrates.
Non concentrates				
Swede turnips ..	88	1	0.2	9
Potatoes ..	75	2	0.1	21
Cabbage ..	89	1.5	0.5	8
Oat Straw ..	14	4	2	37
Meadow hay ..	10	10	3	45
Pasture grass ..	80	3.5	0.8	10
Fattening Foods				
Crushed oats ..	13	9	6	60
Maize meal ..	12	10	4	70
Barley meal ..	13	12	2	66
Pollard ..	13	15	5	57
Flesh forming foods				
Decorticated Cotton cake ..	9	40	9	26
Decorticated Earthnut cake ..	10	46	7	23
Meat meal ..	11	60	6	—
Soya bean meal ..	11	44	1.5	32

The problem confronting the purchaser of feeding stuffs, who is concerned with the business of getting best value for money, is one which is much more difficult to solve than is the case with artificial fertilisers. There are at least four aspects of the problem to be considered:

- (1) the quality of the different foods offered for sale. This can be determined by reference to the particulars of composition which a seller must give a purchaser in accordance with the Fertilisers and Feeding Stuffs Act.
- (2) The physical condition of the foods, and if fresh or stale.
- (3) The suitability of the foods for the purpose in view.
- (4) The comparative values of the foods at the prices quoted.

The chief concern of this section of the Report is comparative values and, therefore, that aspect of the problem will be considered specifically.

The proteins play a part in the nutrition of the animal which cannot be taken by either carbohydrates or oils. In addition to this, the proteins, carbohydrates and oils have very different values for the production of energy or fat. It therefore follows that the simple procedure of totalling the percentages of these three ingredients and dividing this total into the price per ton in order to obtain a value for a unit of the food-stuff is quite unsound. Various methods have been used to compare the values of different feeding stuffs, but none is completely satisfactory. For practical purposes the least cumbersome is the

method whereby the food-stuffs are placed in groups of similar composition, and the values of the members of each group are then compared by consideration of (a) their protein equivalents, and (b) their starch equivalents. The starch equivalent is the number of pounds of starch which would be required to produce the same amount of "fat" in an animal as 100 pounds of the food-stuff in question. It is essentially a measure of the fat-producing value of the food-stuff. The protein equivalent is the number of pounds of digestible true protein, plus half the number of pounds of non-protein nitrogenous substances such as amides, present in 100 pounds of the food-stuff. It is a measure of the value of the food-stuff to the animal as a source of protein.

By this method all foods can be reduced to comparable standards based on (1) the protein equivalent, and (2) the starch equivalent.

The next stage in comparing values is to determine the cost of a unit of protein equivalent and of starch equivalent in the different foods which are being compared, and to enable the reader to do this the protein and starch equivalent figures for the different foods are given on the table on page 379, and also the cost per unit of protein equivalent and of starch equivalent in each case. These costs have been determined by dividing the protein equivalent figure and the starch equivalent figure, respectively, into the current price per ton, and the lower the quotient figures thus obtained the cheaper is the particular food as a source of protein or of starch equivalent as the case may be.

However, it would be quite misleading to compare the cost of a unit of protein equivalent in a protein food (which is purchased principally for its protein) with the cost of a similar unit in a starchy food. In other words, foods such as maize meal and pollard cannot be compared on the basis of cost of protein equivalent with foods such as decorticated cotton cake and meat meal.

The best course to adopt is to consider for what purpose the particular food is required, decide what foods are suitable for that purpose, examine the samples of these different foods which are offered and, if all appear to be satisfactory, apply the unit value system of determining which one provides protein equivalent or starch equivalent at the cheapest rate. A few examples may be helpful in explaining the procedure.

- (1) Suppose it is intended to purchase a protein food for the purpose of balancing a ration for dairy cows. The protein foods suitable for dairy cows are decorticated cotton cake, decorticated earthnut cake and soya bean meal. From the table on page 379 it is seen that at the current average prices of these foods the cost of the unit of protein equivalent in each is as follows:—

Decorticated cotton cake	...	...	5/10d.
Decorticated earthnut cake	...	...	4/11d.
Soya bean meal	...	...	5/4d.

Accordingly decorticated earthnut cake is the cheapest source of protein.

- (2) A protein food is required as a milk substitute to balance the ration for fattening pigs. The foods suitable for this purpose are soya bean meal, meat meal and meat and bone meal. Referring again to the table, it is seen that at the current average prices of these foods the cost of the unit of protein equivalent in each is as follows :—

Soya bean meal	...	...	5/4d.
Meat meal (60% protein)	...	...	5/10d.
Meat and bone meal (40% protein)	...	...	6/6d.

Therefore meat meal (60% protein) is the cheapest source of protein amongst the purchased foods suitable for pigs. This example shows also how the price per ton may mislead a purchaser into thinking he is being economical when he buys at the cheapest price. The 60% meat meal costs 4/2d. per cwt. more than the 40% meat and bone meal, and yet it is a cheaper source of protein than the latter. Besides, a lesser proportion in the meal mixture will suffice, and having usually a lower content of oil than the 40% grade, it is likely to prove more satisfactory than that grade, both from the thriving point of view and its effect on the quality of the bacon.

- (3) Whether is it more economical to feed white pollard than brown pollard or white bran than red bran, even though the prices per ton of the white grades are higher than those of the brown or red grades? The figures in the table show that the cost of both the unit of protein equivalent and of starch equivalent is less for the brown pollard than the white, and less for the red than the white bran. It follows, therefore, that at current prices the coloured grades of pollard and bran are cheaper than the white grades. It should be remembered in this connection, however, that the comparison of costs in these cases has been made on the assumption that the composition of the coloured grades is the same as that of the white grades. A pollard containing say, 8 per cent. fibre, even if of a white colour, would have a far lower feeding value than one containing only 4 per cent. of fibre. Colour is not a guide as to the feeding value of pollard or bran.

PRICES OF FERTILISERS.

The prices per ton of certain phosphatic manures in Northern Ireland last month were as follow :—

Gafsa Rock Phosphate (26% S.P.A.)	..	£2 15 0 to £3 5 0
Semsol (5% S.P.A., 15½% P.A.)	..	£3 2 0 to £3 12 6
Superphosphate (16% S.P.A.)	..	£3 7 6 to £3 15 0
Basic Slag (15% to 18.8% P.A.)	..	£3 6 6 to £4 0 0

Abbreviations : S.P.A.—Soluble Phosphoric Acid. P.A.—Phosphoric Acid.

PRICES OF FAT STOCK.

The following were the average prices per live cwt. of bullocks and heifers, sold at Belfast Auction Marts during each of the five weeks ended 2nd November, 1937.

Week ended.	Bullocks.		Heifers.	
	s.	d.	s.	d.
5th October ...	37	0	...	36 3
12th October ...	36	6	...	36 0
19th October ...	36	3	...	35 9
26th October ...	35	6	...	35 3
2nd November ...	35	9	...	35 3

At the first week's sales supplies of fat cattle were smaller, and much of the stock was of good quality. Trade opened on a promising note and bidding was brisk especially for first quality cattle. All over prices showed a slight improvement on the week. At the next three sales, however, increasing supplies were offered chiefly as the result of graziers disposing of their stock at the close of the grass season. Trade at these sales showed a steady deterioration, and prices eased to the end of the month. The shorter numbers offered at the sale held on the 2nd inst. were up to the usual standard of quality, and for these trade had a keener note and prices inclined slightly upward.

PRICES OF LIVE STOCK.

Average prices of Live Stock at Fairs during the month of October, 1937.

Date	Fair	Calves (under 9 months)	Store Cattle	Fat Cattle (18 months and over)	Springers		Milch Cows	Fat Lambs (under 12 months old)	Fat Sheep (over 2 years old)	Young Pigs
					Cows	Heifers				
		Per head £ s.	Per cwt. Live weight. 33/- to 39/- 38/- to 41/- 36/- to 40/- 36/- to 40/- 37/6 to 42/- 31/- to 42/6 39/- to 41/-	Per cwt. Live wgt. 33/- 34/- 34/- 34/- — 31/6 34/-	Per head £ s. 16 12/6 16 10 20 0 16 0 19 15 19 0 16 10	Per head £ s. 14 15 16 10 16 0 — 18 15 — 16 0	Per head £ s. 16 16/3 16 5 17 0 — 17 2/6 18 0 15 10	Per head £ s. *1 18/9 *2 0 *1 9/6 — *2 0 — *1 15 *2 0 *1 17 *1 13	Per head £ s. *1 15 — — — — — †1 15	Per head £ s. — — 1 9 — 1 12/6 1 15 1 15 — 1 16 — 1 6/6 — — — 1 7/6 — 1 12/6 — 1 6/6 — 1 7 — 1 16 — 1 17/6 — 1 16/9 — 1 15 — 1 7/6 — 1 14 — 1 13
1	Moy ..	—	33/- to 39/-	33/-	16 12/6	14 15	16 16/3	*1 18/9	—	—
5	Omagh	6 15	38/- to 41/-	34/-	16 10	16 10	16 5	*2 0	*1 15	—
6	Rathfriland	6 14/3	36/- to 40/-	34/-	20 0	16 0	17 0	*1 9/6	—	—
7	Strabane	5 0	36/- to 40/-	34/-	16 0	—	—	—	—	—
7	Ballymoney	6 5	37/6 to 42/-	—	19 15	18 15	17 2/6	*2 0	—	1 12/6
8	Ballygawley	—	31/- to 42/6	31/6	19 0	—	18 0	*1 15	—	1 15
8	Irvinestown	7 8/9	39/- to 41/-	34/-	16 10	16 0	15 10	†2 0	—	1 15
11	Enniskillen	5 6	30/- to 39/-	33/-	15 0	14 0	14 0	†1 17	†1 15	1 16
11	Limavady	—	32/- to 38/-	34/-	—	—	—	†1 13	—	1 6/6
13	Crossgar	—	38/- to 40/-	—	22 0	—	18 10	—	—	—
13	Kilrea ..	5 10	30/- to 39/-	34/-	20 0	20 0	15 10	—	—	1 7/6
16	Portadown	5 0	33/- to 37/6	34/6	17 0	17 0	17 10	—	—	1 12/6
18	Camlough	5 0	32/- to 40/-	32/-	17 10	18 0	15 0	*1 12	†1 3	—
18	Londonderry	—	30/- to 37/-	34/-	17 10	—	—	—	—	1 6/6
19	Claudy	—	30/- to 37/-	34/-	17 0	—	—	—	—	1 7
20	Lisnakea	4 17/3	30/- to 39/-	35/-	17 0	16 0	15 0	—	—	1 16
21	Ballynahinch	—	35/- to 37/-	—	19 0	17 0	16 5	*1 10	*1 13	1 17/6
21	Moneyamore	5 8	32/6 to 37/6	32/6	18 0	16 10	15*10	*1 14	*1 3/9	—
22	Fintona	6 12/6	38/- to 40/-	33/6	17 0	16 10	15 10	*1 17/6	—	1 15
28	Antrim	5 13	35/- to 41/-	33/-	24 0	—	—	—	—	—
29	Killylea	—	32/- to 42/6	32/-	18 0	14 0	16 10	*1 15	*1 17/6	—
29	Castlederg	6 10	37/- to 39/6	35/-	16 10	—	14 10	—	—	1 14
30	Ballymena	8 10	27/- to 41/-	—	23 0	22 10	21 0	—	—	1 13

* Downs and Cross.

† Long Wools.

† Mountain.

IMPORTS AND EXPORTS.

Table showing the Imports and Exports through Northern Ireland ports of certain Agricultural Products during the month ended 30th September, 1937, and the nine months ended 30th September, 1937, with comparative figures for the corresponding periods in 1936. This information also includes trade with the Irish Free State across the land boundary.

(These figures are supplied through the courtesy of the Ministry of Commerce and are subject to revision).

COMMODITY.	IMPORTS.				EXPORTS.			
	Month ended 30th Sept.	Month ended 30th Sept.	9 months ended 30th Sept.	9 months ended 30th Sept.	Month ended 30th Sept.	Month ended 30th Sept.	9 months ended 30th Sept.	9 months ended 30th Sept.
	1937	1936	1937	1936	1937	1936	1937	1936
Bacon cwt.	3,826	2,768	28,943	26,164	45,318	37,423	274,427	291,185
Hams cwt.	1,797	2,308	14,042	17,303	11,323	11,388	91,014	105,102
Pork cwt.	250	342	4,056	8,608	2,513	2,988	25,252	29,033
Butter cwt.	18,955	13,612	165,056	159,364	563	857	2,723	5,422
Eggs gt. ds.	52,127	45,937	774,985	1,025,471	299,151	258,352	2,896,986	2,989,415
Oat Products (inc. Oatmeal)cwt.	2,156	3,316	18,185	22,732	4,092	4,752	58,495	54,666
Potatoes tons	—	—	6,042	10,908	*1,393	*2,569	*137,849	*169,591
Poultry cwt.	143	152	2,370	3,168	14,862	12,138	143,635	128,247
Grass Seeds cwt.	170	657	6,909	9,949	4,042	8,170	239,480	291,639

* These figures represent the quantities of potatoes inspected for shipment by the Ministry of Agriculture.

There were no imports of oats direct from abroad during the month of September, 1937, or in the corresponding month last year.

Table showing the numbers of Live Stock (1) exposed for sale, and (2) sold at 18 fairs in Northern Ireland during the months of October, 1936, and September and October, 1937:—

Description of Live Stock.	October, 1936.		September, 1937.		October, 1937.	
	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.
Store Cattle ...	7,776	5,090	6,586	4,434	8,214	4,953
Fat Cattle ...	1,554	1,226	967	754	1,220	1,008
Dairy Cattle ...	1,540	1,153	1,399	1,108	1,383	1,055
Sheep ...	1,029	783	2,590	2,207	993	1,849
Lambs ...	772	651	2,743	2,148	1,594	1,167
Young Pigs ...	2,912	2,335	2,685	2,177	2,587	2,122

Larger offerings of store cattle of fair to good quality and condition were a feature of last month's trade at fairs where business generally was rather quiet. The best enquiry in the store cattle end was for forward stock and for good small cattle. Prices all over were again a little cheaper on the month, but remained appreciably better than at this time last year. Buyers were operating freely in the hope of picking up good cattle at bargain rates. Many animals, however, failed to find buyers. Supplies of fat cattle increased on the month, and here again business was of a desultory nature. A large proportion of the offerings were bought up, and prices in the main were cheaper on the month, although in certain districts some good types of medium weights made about late rates. Dairy cattle were barely average turnouts. The demand for good dairy cows and springers remained steady, and with supplies somewhat limited prices were firmly held at recent levels. Sheep and lambs recorded seasonal reductions in numbers and a duller note was generally in evidence. Good breeding sheep were selling fairly well, and fat lambs also met an enquiry in some districts at slightly cheaper rates. Prices for all stock in this section declined on the month. Shorter offerings of young pigs were shown in most districts and a keen demand for suckers resulted in prices tending to harden in many instances. Older animals and store pigs also cleared readily at around late rates. Sows for breeding were few in number and trade was of very small dimensions. The best types were selling freely at from £8 to £12 per head.

12th November, 1937.

This report will be sent free monthly as issued on application being made to the Secretary, Ministry of Agriculture, Stormont, Belfast.

MINISTRY OF AGRICULTURE. List of Leaflets and other Publications.

LEAFLETS.

- | | |
|---|--|
| <p>No. 1. Flax Seed, 1936.
 " 2. Improvement of Farm Poultry.
 " 3. Feeding for Egg Production.
 " 4. Marketing of Eggs.
 " 5. The Dishorning of Calves.
 " 6. The Packing of Apples in Standard Boxes.
 " 7. Potato Trials.
 " 8. Seed Testing for Farmers.
 " 9. The Renovation of Orchards.
 " 10. Fruit Tree Pests—Capcid Bugs.
 " 11. Fruit Tree Pests—Aphides and Apple Sucker.
 " 12. Fruit Tree Pests—Caterpillars.
 " 13. Contagious Abortion in Cattle.
 " 14. Cheese-making on the Farm.
 " 15. Suitable Varieties of Fruit.
 " 16. The Feeding of Dairy Cows.
 " 17. Home Bottling of Fruits and Vegetables.
 " 18. Marketing of Dead Poultry.
 " 19. How to Feed Linseed.
 " 20. The Hatching and Rearing of Chickens.
 " 21. The Uses and Advantages of Portable Poultry Houses.
 " 22. Leather-jacket Grubs.
 " 23. The Handling and Care of Wool.
 " 24. Fluke in Sheep.
 " 25. The Rearing and Management of Young Horses.
 " 26. Ordnance Survey Maps for Farmers.
 " 27. How to Keep Eggs Clean.
 " 28. The Construction of a Laying House for Poultry.
 " 29. The Selection and Breeding of Laying Hens.
 " 31. Coccidiosis in Poultry.
 " 32. Roup of Poultry (Fowl Pox).
 " 33. Spraying Calendar for Apple Orchards.
 " 34. The Pruning of Apple Trees.
 " 35. The Fattening of Pigs.
 " 36. Advantages of Milk Recording.
 " 37. The Raising and Fattening of Turkeys.
 " 38. The Destruction of Charlock.
 " 39. The Production of Clean Milk.
 " 40. The Laying Down and Management of Temporary Pastures.
 " 41. Blackleg, Blackquarter or Quarterill.
 " 42. The Purchase of Balanced Rations for Dairy Cows.
 " 43. Tuberculosis in Poultry.</p> | <p>No. 44. Results of Crop Experiments, 1935.
 " 45. The Breeding and Rearing of Pigs.
 " 46. Hints for Winter Egg Production.
 " 47. The Care and Management of Sheep.
 " 49. American Gooseberry Mildew.
 " 50. Potato Blight.
 " 51. Butter-making on the Farm.
 " 52. Gapes in Chickens.
 " 54. The Breeding and Rearing of Calves.
 " 55. Destruction of Ragwort or Bendweed.
 " 56. Identification of Egg Supplies.
 " 57. How to have Eggs of First Quality.
 " 58. How the Fertilisers and Feeding Stuffs Act benefits the Farmer.
 " 59. Bacillary White Diarrhoea (Pullorum Disease).
 " 60. Advantages of Winter Agricultural Classes.
 " 61. The Care and Management of Breeding Bulls.
 " 62. The Production of Timber on the Farm.
 " 63. Sheep—Castration, Docking, Foot-Rot and Care of Feet.
 " 64. The Destruction of Warble Fly Maggots in Cattle.
 " 65. The Packing of Apples in Barrels.
 " 66. Seed Testing Facilities for Traders.
 " 67. The Cultivation of Vegetables.
 " 68. The Cultivation of Strawberries.
 " 69. The Construction of Piggeries.
 " 70. Ringworm.
 " 71. The Cultivation of Raspberries.
 " 72. Tree Planting for Shelter and Ornament.
 " 73. The Propagation and Maintenance of Healthy Stocks of Potatoes.
 " 74. New Pure Strains of Flax.
 " 75. Pig Production and the Pigs Marketing Scheme.
 " 76. Acarine (Isle of Wight) Disease of Bees.
 " 77. Licensing of Milk Producers and Distributors.
 " 78. Graded Milk.
 " 79. The Picking and Storing of Apples.
 " 80. Hoose or Husk in Farm Stock.
 " 81. The Construction of Cow Houses.
 " 82. White Scour in Calves.
 " 83. The Care, Management and Feeding of the Poultry Breeding Stock.
 " 84. Lime and Liming.</p> |
|---|--|

Any of the above leaflets may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

CIRCULARS.

- No. 1. Phosphatic Fertilisers.
 " 5. Why Pay a Tax on the Horns of Cattle ?
 " 8. Basic Slag.
 " 9. Smut in Oats.
 " 10. Purchase of Fertilisers and Feeding Stuffs.
 " 11. Fertilisers and Feeding Stuffs Act—General Summary.
 " 12. The Treatment of Liver Fluke.
 " 13. The ox-Warble Fly.
 " 306. Fertilisers and Feeding Stuffs Act, 1926—Revision of Regulations.

MISCELLANEOUS PUBLICATIONS.

Store Cattle.
 Reports on Egg-Laying Tests.
 Crop Insurance.
 List of Growers of Certified Crops of Immune Varieties of Potatoes.
 List of Growers of Certified Crops of Non-Immune Varieties of Potatoes.
 The Ministry's Monthly Report.
 Register of Premium Stallions.
 Guide to the Live Stock Breeding Act (Northern Ireland), 1922.
 Guide to the Marketing of Fruit Act (Northern Ireland), 1932.

Any of the above publications may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

The following publications can be obtained from His Majesty's Stationery Office, 80 Chichester Street, Belfast, at the prices stated :—

- (1) The Annual Report of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
- (2) Annual Report upon the Agricultural Statistics of Northern Ireland. Price 2/- net.
- (3) The Journal of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
- (4) The Agricultural Output of Northern Ireland, 1925. Price 2/6 net.

ULSTER DAIRY SCHOOL, COOKSTOWN.

U. D. S.

USEFUL and practical courses of instruction in poultry-keeping, dairying and domestic science are provided for girls at this School.

DEFINITE advantages are derived from a course of training, whether the object is to return home or to take employment elsewhere.

SCHOOL fees are only £3 : 3 : 0 per term of 11 weeks, inclusive of board and residence.

Candidates for admission should obtain copies of the prospectus from the Ministry of Agriculture, Stormont, Belfast, and send in application forms without delay. Next term begins on 4th January, 1938.

